Attorney Docket No.: PHO 99004CIP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: *Bennett*	) Art Unit: *2626*
Serial No.: *10/653,039*	) Examiner: Martin Lerner
Filed: *August 29, 2003*	)
For: *Query engine for processing voice based queries including semantic decoding*	)

NOTICE OF CONCURRENT LITIGATION PROCEEDINGS PROVIDED PURSUANT TO MPEP 2001.06(c)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

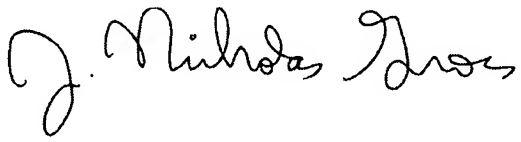
Pursuant to 37 C.F.R. § 1.56 and MPEP 2001.06(c) the Patent Owner hereby submits the present Notice of Concurrent Litigation Proceeding involving two different litigations. They are:

- A lawsuit for patent infringement filed in the Northern District of California under the case identifier CV 08-0863. This action is against Wells Fargo Bank for infringement of patents 6,665,640; 6,633,846; 7,050,977 and 7,277,854, which contain subject matter related to the present application. Additional materials are presented, including 1) a copy of the Complaint filed by Phoenix; 2) a copy of the Answer filed by defendant Wells Fargo.
- A lawsuit for patent infringement filed in the Central District of California under the case identifier CV 08-0984. This action is against DirectTV for infringement of patents 6,615,172; 7,050,977; 7,139,714 and 7,225,125, which contain subject matter related to

the present application. Additional materials are presented, including 1) a copy of the Complaint filed by Phoenix; 2) a copy of the Answer filed by defendant DirectTV.

The present claims stand on their own; however the present application does derive priority from such patents and other applications, and does relate to similar subject matter. Nothing in these pleadings, or any other materials from such case, are believed to be material to the present application. They are provided solely to comply with the PTO's procedures covering such disclosures.

Respectfully submitted,



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PHOENIX SOLUTIONS, INC.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

EMC

PHOENIX SOLUTIONS, INC., a California corporation,

Plaintiff,

v.

WELLS FARGO & COMPANY, a Delaware corporation,

Defendant.

CASE NO. CV 08 0863

COMPLAINT FOR DAMAGES AND INJUNCTIVE RELIEF FOR INFRINGEMENT OF U.S. PATENT NOS. 6,633,846, 6,665,640, 7,050,977 AND 7,277,854 UNDER 35 U.S.C. § 271 AND DEMAND FOR JURY TRIAL PURSUANT TO FED. R. CIV. PROC., RULE 38

TROJAN LAW OFFICES
BEVERLY HILLS

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Plaintiff, PHOENIX SOLUTIONS, INC. (hereinafter "Plaintiff" or "Phoenix"), hereby complains against Defendant, WELLS FARGO & COMPANY (hereinafter "Defendant" or "Wells Fargo"), as follows:

1. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 271 *et seq.*

I. THE PARTIES

2. Plaintiff is a corporation organized and existing under the laws of the State of California, with a place of business at 634 Georgia Avenue, Palo Alto, California, 94306.

3. Upon information and belief, Defendant is a corporation organized and existing under the laws of the State of Delaware with a place of business at 420 Montgomery Street, San Francisco, California, 94163.

II. FACTUAL BACKGROUND

4. Plaintiff is the owner by assignment of U.S. Patent Nos. 6,633,846, 6,665,640, 7,050,977, and 7,277,854 (hereinafter "Patents in Suit") directed to "speech recognition software".

5. Plaintiff Phoenix developed the next generation of speech recognition systems that give users the ability to have a verbal conversation with a computer about a subject on which the computer has been programmed to process and generate intelligent responses. One of the first applications of this new technology was its use in telephone customer service lines where the customer calls a computer and a "virtual customer service agent" answers the line and interacts with a caller using "natural speech" akin to a live person.

6. Phoenix encompasses the life work of a pioneer in the field of computer-based speech recognition, Dr. Ian Bennett. Originally from Jamaica, Dr. Bennett graduated with honors from the University of British Columbia and went on to receive his Master's and Doctorate degrees in electrical engineering from

Stanford University. While at Stanford, Dr. Bennett developed the first practical analog processor for speech compression. After graduation he held technical engineering positions with several high technology companies and contributed to device and product development. As a consultant to the Variable Speech Corp. of Tokyo, Japan, he contributed to the development of an analog speech compression VLSI speech processor used for audio compression in consumer speech recorders. In 1994, Dr. Bennett began the development of a natural language query system (NLQS). Subsequently, he founded Phoenix Solutions, where he guided the development of algorithms for statistics- and semantics-based signal processing of speech that allow a computer to take in natural speech questions and return answers that also sound like natural speech. Dr. Bennett developed various applications for his technology, including interactive conversational systems and interactive guides, intelligent tutoring systems and form-filling systems. Dr. Bennett is currently at the National Science Foundation serving as a Program Director within the Directorate of Engineering, Division of Industrial Innovation & Partnerships.

7. Defendant Wells Fargo is a financial services company that provides banking, insurance, investment, mortgage loan, and consumer finance services. In connection with its electronic services, Defendant (and/or others on its behalf) established and operates a number of customer support lines, which can be reached for example at (800) 642-4720 and upon information and belief, other toll-free phone numbers. The customer support lines employ a natural language interactive voice response (IVR) system that includes a virtual agent (hereinafter interchangeably referred to as "IVR system").

8. The Plaintiff's natural language IVR system is superior to conventional touch-tone systems because the caller can simply talk to the system using natural language. In contrast, touch-tone IVR systems require the caller to select from a series of choices using a more limited telephone keypad. IVR touch

tone systems are also less efficient since they require callers to listen to an entire menu of choices and wade through a series of menus before providing a response to the caller. Consumers hang up at a greater rate in frustration when they become lost in the maze of menus.

9. The alternative to touch tone menu systems is to employ live operators. When compared to live operators, the Plaintiff's IVR system is much more cost effective. Based upon industry data, it is estimated that Defendant's use of its current IVR system has allowed it to save 93% of the cost it previously incurred in providing its customer support line and Defendant's customer satisfaction has increased by 30%.

10. Upon information and belief, Defendant operates its IVR system using a combination of telephony hardware and computer server hardware that is specifically adapted by Defendant (and/or others on its behalf) to respond to spoken questions from callers concerning the Defendant's business. Such hardware uses supporting software that includes speech recognition and natural language engines used to understand the spoken questions from callers.

11. Upon information and belief, the speech recognition engine used by Defendant is distributed, so that some of the speech-processing operations for understanding callers are performed on a client computing system (such as telephony platform or other hardware) while other speech processing operations are performed on a separate server computing system. Upon information and belief, Defendant (and/or others on its behalf) configure such computing systems to customize what speech processing operations will take place on such respective hardware systems to maximize certain characteristics of the system, and to regulate how speech data from the callers is transferred between such systems.

12. When customers place calls to Defendant's IVR system, they can speak in a conversational style as if they were speaking to a real person.

Defendant's interactive virtual agent responds to the caller's questions in real-time by providing answers in natural speech. The virtual agent has been taught natural language dialogues based on information concerning Defendant's products provided by the Defendant and incorporated into the software. In this manner, the virtual agent can understand questions posed by customers concerning Defendant's products, and give relevant answers.

13. Defendant's IVR system uses a speech recognition engine to break down the customer's questions into specific words understood by the IVR system. For example, the speech recognition engine could determine that the user has said his or her account number. Defendant controls precisely what specific words its IVR system will understand as part of its vocabulary by configuring (and/or having others configure on its behalf) certain aspects of such client computing system and/or server computing system.

14. Defendant's IVR system employs a natural language engine to understand the meaning of the specific words spoken by its customers. The IVR system, by understanding the meaning and context of specific words, may determine that the customer is asking about a service related problem. Defendant controls precisely what interpretation the IVR system should give to various words spoken by its customers by configuring (and/or having others configure on its behalf) certain aspects of the client computing system and/or server computing system.

15. Based on determining the most likely meaning of the customer's specific question, the interactive virtual agent responds with a specific answer. The answer may take the form of an audible response from the agent, or it may take the form of the IVR system routing the caller to a live person working within the appropriate department (such as the service department in the example above). In all instances, Defendant alone controls precisely what responses and actions virtual

agent takes, and has configured (and/or has had others configure on its behalf) certain aspects of such client computing system and/or server computing system to provide such desired responses or actions.

16. Upon information and belief, Defendant also configured and controlled (and/or has had others configure and/or control on its behalf) other aspects of the virtual agent's overall behavior, including among other things, the gender, apparent age, speech rate, prosody, style and rate of response. These parameters are selected and controlled by Defendant to increase customer satisfaction with the customer support line.

17. Upon information and belief, Defendant (and/or others on its behalf) designed, customized and selected the personality exhibited by the virtual agent as well. This electronic persona was specifically selected to be appealing and attractive to Defendant's customers and to maximize utilization of the IVR system by such customers.

18. Upon information and belief, the information used by Defendant's IVR system (including e.g., the grammar used, specific questions to which it can respond, the interpretation of questions, and the answers to be given to customers) were derived by Defendant (and/or others on its behalf) from collecting and studying data from thousands of actual calls made to Defendant's customer support line. Based on this, Plaintiff believes that Defendant (and/or others on its behalf) has trained the IVR system with Defendant's call center data that is unique to Defendant's business. As a result, the IVR system is tailored to respond with appropriate answers to questions posed by Defendant's customer base.

19. Accordingly, Defendant's IVR system has been customized with customer content data that is not available from a third party. This Defendant-specific content data is critically important to the behavior and operation of Defendant's IVR system, since without it the IVR system would not know what

words to recognize from a caller's utterance, how to determine the meaning of such words, and/or what answer to give to the caller as a response.

20. Defendant's IVR system, as noted above, is a combination of components, including at least some hardware, software and content which it obtained from third parties (third party components). Nonetheless, and on information and belief, Defendant is responsible for and has caused such third party components to be combined, adapted and configured (including with such Defendant-specific content) in accordance with specific performance, content requirements and scenarios of the Defendant's customer support operations.

21. Consequently, and on further information and belief, the current structure and operation of Defendant's IVR system is a result of content contributions, performance specifications and operational specifications provided by Defendant and configuration/modification of third party components made by Defendant (and/or others on its behalf). Such third party components – as currently available from such third parties - by themselves would not be sufficient to implement Defendant's IVR system without Defendant's cooperation, contributions and actions, including Defendant's provision of the Defendant-specific content data.

22. On or about June 2, 2006, Plaintiff sent a letter to Defendant, stating that the IVR system is covered by one or more claims of the Patents in Suit. In that letter, Plaintiff included a number of supporting materials to explain its position on the Patents, and further extended an offer to license the Patents in Suit to Defendant. On or about June 27, 2006, Defendant responded, informing Plaintiff that it needed to investigate the matter and requested identification of the patent claims that may be infringed. On or about June 29, 2006, Plaintiff responded to Defendant, stating that Defendant may have overlooked the CD enclosed with the original letter which has extensive representative claim charts pointing out

particularly which claims Plaintiff believes are pertinent to Defendant's system and why. Some many months later on October 18, 2007, and having not heard from Defendant, Plaintiff sent another letter to Defendant to again negotiate a license and requested a response by no later than December 14, 2007. Defendant failed to respond in any meaningful way to the licensing offer or the charge of infringement, necessitating the filing of this action.

III. JURISDICTION AND VENUE

23. This Court has original subject matter jurisdiction over Plaintiff's patent infringement claim pursuant to 28 U.S.C. §1338(a).

24. This Court has personal jurisdiction over Defendant because Defendant's corporate headquarters are located in San Francisco, CA.

25. Venue properly lies in the Northern District of California pursuant to 28 U.S.C. §1391 and §1400, because the acts complained of herein have been committed and are being committed in this Judicial District and Defendant is subject to personal jurisdiction within the District.

IV. FIRST COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 6,633,846

26. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

27. Plaintiff is the assignee of the U.S. Patent No. 6,633,846 ("the '846 Patent"), attached hereto as Exhibit 1, entitled "Distributed Real Time Speech Recognition System". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '846 Patent.

28. Defendant has violated Plaintiff's patent rights by operating an IVR system covered by at least one claim of the '846 Patent. Wells Fargo's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

29. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

30. The infringement of the '846 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

V. SECOND COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 6,665,640

31. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

32. Plaintiff is the assignee of the U.S. Patent No. 6,665,640 ("the '640 Patent"), attached hereto as Exhibit 2, entitled "Interactive Speech Based Learning/Training System Formulating Search Queries Based on Natural Language Parsing of Recognized User Queries". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '640 Patent.

33. Defendant has violated Plaintiff's patent rights by operating an IVR system covered by at least one claim of the '640 Patent. Wells Fargo's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

34. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

35. The infringement of the '640 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

VI. THIRD COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,050,977

36. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

37. Plaintiff is the assignee of the U.S. Patent No. 7,050,977 ("the '977 Patent"), attached hereto as Exhibit 3, entitled "Speech-Enabled Server for Internet Website and Method". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '977 Patent.

38. Defendant has violated Plaintiff's patent rights by operating an IVR system covered by at least one claim of the '977 Patent. Wells Fargo's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

39. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

40. The infringement of the '977 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

VII. FOURTH COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,277,854

41. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

42. Plaintiff is the assignee of the U.S. Patent No. 7,277,854 ("the '854 Patent"), attached hereto as Exhibit 4, entitled "Speech Recognition System Interactive Agent". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '854 Patent.

43. Defendant has violated Plaintiff's patent rights by operating an IVR system covered by at least one claim of the '854 Patent. Wells Fargo's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

44. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

45. The infringement of the '854 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

VIII. DEMAND FOR JURY TRIAL

46. Plaintiff hereby exercises its right to a jury trial under the Seventh Amendment to the United States Constitution, and pursuant to Fed. R. Civ. Proc., Rule 38, demands a jury trial in accordance therewith.

IX. PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for:

a. A preliminary injunction, barring Defendant and all of its agents, officers, attorneys, successors, and assigns from manufacturing, importing or using any system (or components thereof) that infringes upon the '846, the '640, the '977 and the '854 Patents;

b. A permanent injunction, barring Defendant and all of its agents, officers, successors and assigns from manufacturing, importing or using any system

(or components thereof) that infringes upon the '846, the '640, the '977 and the '854 Patents;

c. That Defendant be required to account to Plaintiff for all savings and revenues realized by Defendant and any subsidiary and any partner company of Defendant from the use of IVR systems infringing the '846, the '640, the '977 and the '854 Patents;

d. A judgment for compensatory damages, not less than reasonable royalty, suffered as a result of the patent infringement as well as prejudgment interest;

e. A judgment including a sum equal to a the total projected value of a compulsory license for the life of the patents, discounted to present value, to compensate Plaintiff for future infringement in the event that a permanent injunction is not awarded;

f. Treble damages and attorneys' fees pursuant to 35 U.S.C. §§ 284 and 285 for willful infringement of the '846, the '640, the '977 and the '854 Patents by Defendant; and,

g. Any and all other relief that the Court deems proper.

Respectfully submitted,

TROJAN LAW OFFICES

by

Dated: February 6, 2008

R. Joseph Trojan
Attorney for Plaintiff,
PHOENIX SOLUTIONS, INC.

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WELLS FARGO & COMPANY

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

PHOENIX SOLUTIONS, INC., a California corporation, Plaintiff, v. WELLS FARGO & COMPANY, a Delaware corporation, Defendant.	Case No. CV 08 0863-SBA **AMENDED ANSWER** **DEMAND FOR JURY TRIAL**

Defendant Wells Fargo & Company ("Wells Fargo") answers Phoenix Solutions, Inc.'s ("Phoenix's") complaint ("Complaint") as follows:

1. Wells Fargo admits that the Complaint purports to recite an action for infringement under the patent laws of the United States.

I. THE PARTIES

2. Wells Fargo denies that Phoenix is a corporation organized and existing under the laws of the State of California; Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the remainder of the allegations in this paragraph and, on that basis,

denies the remainder of the allegations in this paragraph.

3. Admitted.

II. FACTUAL BACKGROUND

4. Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the allegations in this paragraph and, on that basis, denies the allegations in this paragraph.

5. Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the allegations in this paragraph and, on that basis, denies the allegations in this paragraph.

6. Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the allegations in this paragraph and, on that basis, denies the allegations in this paragraph.

7. Denied.

8. Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the allegations in this paragraph and, on that basis, denies the allegations in this paragraph.

9. Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the allegations in this paragraph and, on that basis, denies the allegations in this paragraph.

10. Denied.

11. Denied.

12. Denied.

13. Denied.

14. Denied.

15. Denied.

16. Denied.

17. Denied.

18. Denied.

19. Denied.

20. Denied.

21. Denied.

22. Wells Fargo admits that, on or about June 2, 2006, J. Nicholas Gross of the Trojan Law Offices sent a letter addressed to James Strother, purportedly on behalf of Phoenix, in which Mr. Gross stated that the "speech based electronic agent" that Mr. Gross apparently assumed was operated by Wells Fargo "is very likely covered one or more claims of the Phoenix portfolio in this area." Wells Fargo admits that the letter listed U.S. Patent Nos. 6,633,846, 6,616,172, 6,665,640, and 7,050,977 and a pending publication, Publication No. 2004/0117189. Wells Fargo further admits that the letter stated that "we request that you please review the enclosed materials, and let us know within 30 days if Wells Fargo is interested in securing a license to the above technologies." Wells Fargo admits that, on or about June 27, 2006, Walter Linder pointed out in a letter to Mr. Gross that Mr. Gross had failed to identity any specific claims that were infringed and had not provided any specific reasons why any such claims were infringed. Wells Fargo admits that, on or about June 29, 2006, Mr. Gross replied by letter to Mr. Linder that Wells Fargo may have overlooked a CD enclosed with the original letter. Wells Fargo admits that, on or about October 18, 2007, R. Joseph Trojan, purportedly representing Phoenix, sent a letter to Mr. Linder stating, *inter alia*, "the only rational choice is for Wells Fargo to solicit more favorable treatment as a willing licensee than the terms it would receive as a defendant in litigation." The letter further demanded that Wells Fargo "disclose its call volume for each of the past three years for its interactive natural language processing customer support lines." Wells Fargo denies the remainder of the allegations in this paragraph.

III. JURISDICTION AND VENUE

23. This paragraph states no more than a legal conclusion to which no response is required.

24. This paragraph states no more than a legal conclusion to which no response is required.

25. This paragraph states no more than a legal conclusion to which no response is

required.

IV. FIRST COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 6,633,846

26. Wells Fargo repeats and realleges its responses set forth in paragraphs 1-25 above.

27. Wells Fargo admits that what purports to be a copy of U.S. Patent No. 6,633,846 (" '846 patent") is attached to the Complaint as Exhibit 1. Wells Fargo admits that the '846 patent is entitled "Distributed Real Time Speech Recognition System." Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the remainder of the allegations in this paragraph and, on that basis, denies the remainder of the allegations in this paragraph.

28. Denied.

29. Denied.

30. Denied.

V. SECOND COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 6,665,640

31. Wells Fargo repeats and realleges its responses set forth in paragraphs 1-25 above.

32. Wells Fargo admits that what purports to be a copy of U.S. Patent No. 6,665,640 (" '640 patent") is attached to the Complaint as Exhibit 2. Wells Fargo admits that the '640 patent is entitled "Interactive Speech Based Learning/Training System Formulating Search Queries Based on Natural Language Parsing of Recognized User Queries." Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the remainder of the allegations in this paragraph and, on that basis, denies the remainder of the allegations in this paragraph.

33. Denied.

34. Denied.

35. Denied.

VI. THIRD COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,050,977

36. Wells Fargo repeats and realleges its responses set forth in paragraphs 1 - 25 above.

37. Wells Fargo admits that what purports to be a copy of U.S. Patent No. 7,050,977 (" '977 patent") is attached to the Complaint as Exhibit 3. Wells Fargo admits that the '977 patent is entitled "Speech-Enabled Server for Internet Website and Method." Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the remainder of the allegations in this paragraph and, on that basis, denies the remainder of the allegations in this paragraph.

38. Denied.

39. Denied.

40. Denied.

VII. FOURTH COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,277,854

41. Wells Fargo repeats and realleges its responses set forth in paragraphs 1 - 25 above.

42. Wells Fargo admits that what purports to be a copy of U.S. Patent No. 7,277,854 (" '854 patent") is attached to the Complaint as Exhibit 4. Wells Fargo admits that the '854 patent is entitled "Speech Recognition System Interactive Agent." Wells Fargo lacks knowledge or information sufficient to form a belief about the truth of the remainder of the allegations in this paragraph and, on that basis, denies the remainder of the allegations in this paragraph.

43. Denied.

44. Denied.

45. Denied.

VIII. DEMAND FOR JURY TRIAL

46. This paragraph demands a jury trial, and accordingly no response is necessary for this paragraph.

IX. PRAYER FOR RELIEF

47. Wells Fargo denies each allegation of the Complaint not expressly admitted herein.

AFFIRMATIVE DEFENSES

FIRST AFFIRMATIVE DEFENSE

48. On information and belief, the '846 patent is invalid because it fails to enable a person of ordinary skill in the art to make and/or use the purported inventions claimed therein as required by 35 U.S.C. § 112.

SECOND AFFIRMATIVE DEFENSE

49. On information and belief, the '846 patent is invalid because it fails to set forth an adequate written description of the purported inventions claimed therein as required by 35 U.S.C. § 112.

THIRD AFFIRMATIVE DEFENSE

50. On information and belief, the '846 patent is invalid because it fails to provide the best mode known to the putative inventors of practicing the purported inventions claimed therein as required by 35 U.S.C. § 112.

FOURTH AFFIRMATIVE DEFENSE

51. On information and belief, the '846 patent is invalid because it fails to satisfy the definiteness requirement of 35 U.S.C. § 112.

FIFTH AFFIRMATIVE DEFENSE

52. On information and belief, the '846 patent is invalid because the purported inventions claimed therein are anticipated by prior art under 35 U.S.C. § 102.

SIXTH AFFIRMATIVE DEFENSE

53. On information and belief, the '846 patent is invalid because the purported inventions claimed therein do not meet the requirement of non-obviousness contained in 35 U.S.C. § 103.

SEVENTH AFFIRMATIVE DEFENSE

54. On information and belief, the '846 patent is invalid because it fails to set forth

the proper inventors of the purported inventions claimed in the patent.

EIGHTH AFFIRMATIVE DEFENSE

55. On information and belief, the '846 patent is not infringed by Wells Fargo because the claim constructions that would be required to find infringement are barred by the doctrine of prosecution disclaimer and/or prosecution history estoppel.

NINTH AFFIRMATIVE DEFENSE

56. On information and belief, the '640 patent is invalid because it fails to enable a person of ordinary skill in the art to make and/or use the purported inventions claimed therein as required by 35 U.S.C. § 112.

TENTH AFFIRMATIVE DEFENSE

57. On information and belief, the '640 patent is invalid because it fails to set forth an adequate written description of the purported inventions claimed therein as required by 35 U.S.C. § 112.

ELEVENTH AFFIRMATIVE DEFENSE

58. On information and belief, the '640 patent is invalid because it fails to provide the best mode known to the putative inventors of practicing the purported inventions claimed therein as required by 35 U.S.C. § 112.

TWELFTH AFFIRMATIVE DEFENSE

59. On information and belief, the '640 patent is invalid because it fails to satisfy the definiteness requirement of 35 U.S.C. § 112.

THIRTEENTH AFFIRMATIVE DEFENSE

60. On information and belief, the '640 patent is invalid because the purported inventions claimed therein are anticipated by prior art under 35 U.S.C. § 102.

FOURTEENTH AFFIRMATIVE DEFENSE

61. On information and belief, the '640 patent is invalid because the purported inventions claimed therein do not meet the requirement of non-obviousness contained in 35 U.S.C. § 103.

FIFTEENTH AFFIRMATIVE DEFENSE

62. On information and belief, the '640 patent is invalid because it fails to set forth the proper inventors of the purported inventions claimed in the patent.

SIXTEENTH AFFIRMATIVE DEFENSE

63. On information and belief, the '640 patent is not infringed by Wells Fargo because the claim constructions that would be required to find infringement are barred by the doctrine of prosecution disclaimer and/or prosecution history estoppel.

SEVENTEENTH AFFIRMATIVE DEFENSE

64. On information and belief, the '977 patent is invalid because it fails to enable a person of ordinary skill in the art to make and/or use the purported inventions claimed therein as required by 35 U.S.C. § 112.

EIGHTEENTH AFFIRMATIVE DEFENSE

65. On information and belief, the '977 patent is invalid because it fails to set forth an adequate written description of the purported inventions claimed therein as required by 35 U.S.C. § 112.

NINETEENTH AFFIRMATIVE DEFENSE

66. On information and belief, the '977 patent is invalid because it fails to provide the best mode known to the putative inventors of practicing the purported inventions claimed therein as required by 35 U.S.C. § 112.

TWENTIETH AFFIRMATIVE DEFENSE

67. On information and belief, the '977 patent is invalid because it fails to satisfy the definiteness requirement of 35 U.S.C. § 112.

TWENTY-FIRST AFFIRMATIVE DEFENSE

68. On information and belief, the '977 patent is invalid because the purported inventions claimed therein are anticipated by prior art under 35 U.S.C. § 102.

TWENTY-SECOND AFFIRMATIVE DEFENSE

69. On information and belief, the '977 patent is invalid because the purported inventions claimed therein do not meet the requirement of non-obviousness contained in 35

U.S.C. § 103.

TWENTY-THIRD AFFIRMATIVE DEFENSE

70. On information and belief, the '977 patent is invalid because it fails to set forth the proper inventors of the purported inventions claimed in the patent.

TWENTY-FOURTH AFFIRMATIVE DEFENSE

71. On information and belief, the '977 patent is not infringed by Wells Fargo because the claim constructions that would be required to find infringement are barred by the doctrine of prosecution disclaimer and/or prosecution history estoppel.

TWENTY-FIFTH AFFIRMATIVE DEFENSE

72. On information and belief, the '854 patent is invalid because it fails to enable a person of ordinary skill in the art to make and/or use the purported inventions claimed therein as required by 35 U.S.C. § 112.

TWENTY-SIXTH AFFIRMATIVE DEFENSE

73. On information and belief, the '854 patent is invalid because it fails to set forth an adequate written description of the purported inventions claimed therein as required by 35 U.S.C. § 112.

TWENTY-SEVENTH AFFIRMATIVE DEFENSE

74. On information and belief, the '854 patent is invalid because it fails to provide the best mode known to the putative inventors of practicing the purported inventions claimed therein as required by 35 U.S.C. § 112.

TWENTY-EIGHTH AFFIRMATIVE DEFENSE

75. On information and belief, the '854 patent is invalid because it fails to satisfy the definiteness requirement of 35 U.S.C. § 112.

TWENTY-NINTH AFFIRMATIVE DEFENSE

76. On information and belief, the '854 patent is invalid because the purported inventions claimed therein are anticipated by prior art under 35 U.S.C. § 102.

THIRTIETH AFFIRMATIVE DEFENSE

77. On information and belief, the '854 patent is invalid because the purported

inventions claimed therein do not meet the requirement of non-obviousness contained in 35 U.S.C. § 103.

THIRTY-FIRST AFFIRMATIVE DEFENSE

78. On information and belief, the '854 patent is invalid because it fails to set forth the proper inventors of the purported inventions claimed in the patent.

THIRTY-SECOND AFFIRMATIVE DEFENSE

79. On information and belief, the '854 patent is not infringed by Wells Fargo because the claim constructions that would be required to find infringement are barred by the doctrine of prosecution disclaimer and/or prosecution history estoppel.

THIRTY-THIRD AFFIRMATIVE DEFENSE

80. On information and belief, one or more of Phoenix's claims are barred by the doctrine of laches.

THIRTY-FOURTH AFFIRMATIVE DEFENSE

81. On information and belief, Phoenix's claims for damages are limited and/or barred by its failure to comply with the provisions of 35 U.S.C. § 287.

THIRTY-FIFTH AFFIRMATIVE DEFENSE

82. On information and belief, Phoenix's claims for infringement of the '846 patent are barred in whole or in part by its failure to comply with the duty of candor before the United States Patent and Trademark Office ("USPTO"). Phoenix misrepresented or omitted material information in prosecuting the '846 patent. The materiality of the information that was omitted is confirmed by the fact that, as explained further below, in each instance the reference in question was cited to Phoenix by a patent examiner overseeing the prosecution of a patent application seeking to claim related subject matter, and the reference was cited as a ground for rejecting the claims of that pending application. That demonstrates that a reasonable examiner would have likely considered the withheld information relevant in assessing the patentability of the claims here. Further, on information and belief, Phoenix withheld the information with the intent to deceive the USPTO. Phoenix's intent to deceive the USPTO can be inferred from the fact that it repeatedly failed to cite material prior art of which it was made aware during the

course of prosecuting related applications. Illustrative examples of such failures to disclose material prior art of which Wells Fargo is currently aware are discussed below. As a result of at least these omissions, the '846 patent is unenforceable due to inequitable conduct.

83. During the time that the '846 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,615,296 to Stanford. Phoenix became aware of the Stanford patent no later than May of 2002, when the Examiner in the '640 patent prosecution mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Stanford patent.

84. Well over three months later, in September of 2002, Phoenix submitted a supplemental Information Disclosure Statement. That IDS contained no mention of the Stanford patent. Days after that, Phoenix submitted a set of amendments and arguments intended to overcome the Examiner's prior rejection of the claims of the '846 patent. Still no mention was made of the Stanford patent, despite the fact that Phoenix had attempted at length to distinguish the Stanford patent in the '640 patent prosecution.

85. On March 12, 2003, the Examiner gave notice of allowance of all claims of the '846 patent. Phoenix still failed to disclose to the USPTO the Stanford patent, a reference that may well have led the USPTO to withdraw its notice of allowance of the claims.

86. The '846 patent reflects on its face that the Stanford patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '846 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '846 patent is unenforceable.

87. Also during the time that the '846 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,983,190 to Trower. Phoenix became aware of the Trower patent no later than May of 2002, when the Examiner in the '640 patent prosecution mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Trower patent.

88. Well over three months later, in September of 2002, Phoenix submitted a supplemental Information Disclosure Statement. That IDS contained no mention of the Trower

patent. Days after that, Phoenix submitted a set of amendments and arguments intended to overcome the Examiner's prior rejection of the claims of the '846 patent. Still no mention was made of the Trower patent.

89. On March 12, 2003, the Examiner gave notice of allowance of all claims of the '846 patent. Phoenix still failed to disclose to the USPTO the Trower patent, a reference that may well have led the USPTO to withdraw its notice of allowance of the claims.

90. The '846 patent reflects on its face that the Trower patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '846 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '846 patent is unenforceable.

THIRTY-SIXTH AFFIRMATIVE DEFENSE

91. On information and belief, Phoenix's claims for infringement of the '640 patent are barred in whole or in part by its failure to comply with the duty of candor before the USPTO. Phoenix misrepresented or omitted material information in prosecuting the '640 patent. The materiality of the information that was omitted is confirmed by the fact that, as explained further below, in each instance the reference in question was cited to Phoenix by a patent examiner overseeing the prosecution of a patent application seeking to claim related subject matter, and the reference was cited as a ground for rejecting the claims of that pending application. That demonstrates that a reasonable examiner would have likely considered the withheld information relevant in assessing the patentability of the claims here. Further, on information and belief, Phoenix withheld the information with the intent to deceive the USPTO. Phoenix's intent to deceive the USPTO can be inferred from the fact that it repeatedly failed to cite material prior art of which it was made aware during the course of prosecuting related applications. Illustrative examples of such failures to disclose material prior art of which Wells Fargo is currently aware are discussed below. As a result of at least these omissions, the '640 patent is unenforceable due to inequitable conduct.

92. During the time that the '640 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,737,485 to Flanagan. Phoenix became aware of the Flanagan patent

no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Flanagan patent.

93. A year later, in September of 2002, Phoenix submitted a set of amendments and responses to the USPTO's Office Action rejecting the claims of the '640 patent. Phoenix made no mention of the Flanagan patent at that time. Shortly thereafter, Phoenix submitted another supplemental Information Disclosure Statement to the USPTO. Yet Phoenix again made no mention of the Flanagan patent.

94. The '640 patent reflects on its face that the Flanagan patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '640 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '640 patent is unenforceable.

95. During the time that the '640 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,265,014 to Haddock. Phoenix became aware of the Haddock patent no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Haddock patent.

96. A year later, in September of 2002, Phoenix submitted a set of amendments and responses to the USPTO's Office Action rejecting the claims of the '640 patent. Phoenix made no mention of the Haddock patent at that time. Shortly thereafter, Phoenix submitted another supplemental Information Disclosure Statement to the USPTO. Yet Phoenix again made no mention of the Haddock patent.

97. The '640 patent reflects on its face that the Haddock patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '640 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '640 patent is unenforceable.

98. During the time that the '640 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 6,336,090 to Chou. Phoenix became aware of the Chou patent no later

than May of 2002, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Chou patent.

99. A few months later, in September of 2002, Phoenix submitted a set of amendments and responses to the USPTO's Office Action rejecting the claims of the '640 patent. Phoenix made no mention of the Chou patent at that time. Shortly thereafter, Phoenix submitted another supplemental Information Disclosure Statement to the USPTO. Yet Phoenix again made no mention of the Chou patent.

100. The '640 patent reflects on its face that the Chou patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '640 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '640 patent is unenforceable.

THIRTY-SEVENTH AFFIRMATIVE DEFENSE

101. On information and belief, Phoenix's claims for infringement of the '977 patent are barred in whole or in part by its failure to comply with the duty of candor before the USPTO. Phoenix misrepresented or omitted material information in prosecuting the '977 patent. The materiality of the information that was omitted is confirmed by the fact that, as explained further below, in each instance the reference in question was cited to Phoenix by a patent examiner overseeing the prosecution of a patent application seeking to claim related subject matter, and the reference was cited as a ground for rejecting the claims of that pending application. That demonstrates that a reasonable examiner would have likely considered the withheld information relevant in assessing the patentability of the claims here. Further, on information and belief, Phoenix withheld the information with the intent to deceive the USPTO. Phoenix's intent to deceive the USPTO can be inferred from the fact that it repeatedly failed to cite material prior art of which it was made aware during the course of prosecuting related applications. Illustrative examples of such failures to disclose material prior art of which Wells Fargo is currently aware are discussed below. As a result of at least these omissions, the '977 patent is unenforceable due to inequitable conduct.

102. During the time that the '977 patent was pending before the USPTO, Phoenix was

aware of U.S. Patent No. 5,615,296 to Stanford. Phoenix became aware of the Stanford patent no later than May of 2002, when the Examiner in the '640 patent prosecution mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Stanford patent.

103. After May of 2002, Phoenix submitted no less than five Information Disclosure Statements. Not one disclosed the Stanford patent. Phoenix also twice amended its claims, but did not make any mention of the Stanford patent when doing so, despite the fact that Phoenix had attempted at length to distinguish the Stanford patent in the '640 patent prosecution.

104. The '977 patent reflects on its face that the Stanford patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

105. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,737,485 to Flanagan. Phoenix became aware of the Flanagan patent no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Flanagan patent.

106. After September of 2001, Phoenix submitted a half-dozen Information Disclosure Statements. Not one disclosed the Flanagan patent. Phoenix also twice amended its claims, but did not make any mention of the Flanagan patent when doing so.

107. The '977 patent reflects on its face that the Flanagan patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

108. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,265,014 to Haddock. Phoenix became aware of the Haddock patent no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the

Haddock patent.

109. After September of 2001, Phoenix submitted a half-dozen Information Disclosure Statements. Not one disclosed the Haddock patent. Phoenix also twice amended its claims, but did not make any mention of the Haddock patent when doing so.

110. The '977 patent reflects on its face that the Haddock patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

111. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,540,589 to Waters. Phoenix became aware of the Waters patent no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Waters patent.

112. After September of 2001, Phoenix submitted a half-dozen Information Disclosure Statements. Not one disclosed the Waters patent. Phoenix also twice amended its claims, but did not make any mention of the Waters patent when doing so.

113. The '977 patent reflects on its face that the Waters patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

114. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 6,336,090 to Chou. Phoenix became aware of the Chou patent no later than May of 2002, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Chou patent.

115. After May of 2002, Phoenix submitted no less than five Information Disclosure Statements. Not one disclosed the Chou patent. Phoenix also twice amended its claims, but did not make any mention of the Chou patent when doing so.

116. The '977 patent reflects on its face that the Chou patent was never considered by

the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

117. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,983,190 to Trower. Phoenix became aware of the Trower patent no later than May of 2002, when the Examiner in the '640 patent prosecution mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Trower patent.

118. After May of 2002, Phoenix submitted no less than five Information Disclosure Statements. Not one disclosed the Trower patent. Phoenix also twice amended its claims, but did not make any mention of the Trower patent when doing so.

119. The '977 patent reflects on its face that the Trower patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

THIRTY-EIGHTH AFFIRMATIVE DEFENSE

120. On information and belief, Phoenix's claims for infringement of the '854 patent are barred in whole or in part by its failure to comply with the duty of candor before the USPTO. Phoenix misrepresented or omitted material information in prosecuting the '854 patent. The materiality of the information that was omitted is confirmed by the fact that, as explained further below, in each instance the reference in question was cited to Phoenix by a patent examiner overseeing the prosecution of a patent application seeking to claim related subject matter, and the reference was cited as a ground for rejecting the claims of that pending application. That demonstrates that a reasonable examiner would have likely considered the withheld information relevant in assessing the patentability of the claims here. Further, on information and belief, Phoenix withheld the information with the intent to deceive the USPTO. Phoenix's intent to deceive the USPTO can be inferred from the fact that it repeatedly failed to cite material prior art of which it was made aware during the course of prosecuting related applications. Illustrative

examples of such failures to disclose material prior art of which Wells Fargo is currently aware are discussed below. As a result of at least these omissions, the '854 patent is unenforceable due to inequitable conduct.

121. During the time that the '854 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,983,190 to Trower. Phoenix became aware of the Trower patent no later than May of 2002, when the Examiner in the '640 patent prosecution mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Trower patent.

122. Phoenix filed the continuation application that matured into the '854 patent in January of 2005, nearly three years after it indisputably learned of the Trower patent. At no time during the prosecution of the '854 patent did Phoenix disclose the Trower patent to the USPTO.

123. The '854 patent reflects on its face that the Trower patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '854 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '854 patent is unenforceable.

124. During the time that the '854 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 6,101,472 to Giangarra. Phoenix became aware of the Giangarra patent no later than August of 2004, when the Examiner in the '977 patent prosecution mailed an Office Action rejecting the claims of the '977 patent, based in part on obviousness over the Giangarra patent.

125. Phoenix filed the continuation application that matured into the '854 patent in January of 2005, several months after it indisputably learned of the Giangarra patent. At no time during the prosecution of the '854 patent did Phoenix disclose the Giangarra patent to the USPTO.

126. The '854 patent reflects on its face that the Giangarra patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '854 patent and the '977 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '854 patent is unenforceable.

127. During the time that the '854 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 6,330,530 to Horiguchi. Phoenix became aware of the Horiguchi patent no later than August of 2004, when the Examiner in the '977 patent prosecution mailed an Office Action rejecting the claims of the '977 patent, based in part on obviousness over the Horiguchi patent.

128. Phoenix filed the continuation application that matured into the '854 patent in January of 2005, several months after it indisputably learned of the Horiguchi patent. At no time during the prosecution of the '854 patent did Phoenix disclose the Horiguchi patent to the USPTO.

129. The '854 patent reflects on its face that the Horiguchi patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '854 patent and the '977 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '854 patent is unenforceable.

130. During the time that the '854 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 6,901,366 to Kuhn. Phoenix became aware of the Kuhn patent no later than June of 2005, when the Examiner in the '977 patent prosecution mailed an Office Action rejecting the claims of the '977 patent, based in part on obviousness over the Kuhn patent.

131. After June of 2005, Phoenix submitted several Information Disclosure Statements, and also amended the claims several times. At no time during the prosecution of the '854 patent did Phoenix disclose the Kuhn patent to the USPTO.

132. The '854 patent reflects on its face that the Kuhn patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '854 patent and the '977 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '854 patent is unenforceable.

THIRTY-NINTH AFFIRMATIVE DEFENSE

133. On information and belief, the '846 patent is invalid under the doctrine barring double patenting and/or obviousness-type double patenting.

FORTIETH AFFIRMATIVE DEFENSE

134. On information and belief, the '640 patent is invalid under the doctrine barring double patenting and/or obviousness-type double patenting.

FORTY-FIRST AFFIRMATIVE DEFENSE

135. On information and belief, the '977 patent is invalid under the doctrine barring double patenting and/or obviousness-type double patenting.

FORTY-SECOND AFFIRMATIVE DEFENSE

136. On information and belief, the '854 patent is invalid under the doctrine barring double patenting and/or obviousness-type double patenting.

PRAYER FOR RELIEF

WHEREFORE, Wells Fargo prays for judgment as follows:

(a) That Phoenix take nothing by its Complaint and the Court dismiss its Complaint with prejudice;

(b) That the Court find that no claim of the '846 patent has been, or is, infringed willfully, deliberately, or otherwise by Wells Fargo;

(c) That the Court find that no claim of the '640 patent has been, or is, infringed willfully, deliberately, or otherwise by Wells Fargo;

(d) That the Court find that no claim of the '977 patent has been, or is, infringed willfully, deliberately, or otherwise by Wells Fargo;

(e) That the Court find that no claim of the '854 patent has been, or is, infringed willfully, deliberately, or otherwise by Wells Fargo;

(f) That the Court find that the claims of the '846 patent are invalid;

(g) That the Court find that the claims of the '640 patent are invalid;

(h) That the Court find that the claims of the '977 patent are invalid;

(i) That the Court find that the claims of the '854 patent are invalid;

(j) That the Court find that the '846 patent is unenforceable because of inequitable

conduct committed during its prosecution;

(k) That the Court find that the '640 patent is unenforceable because of inequitable conduct committed during its prosecution;

(l) That the Court find that the '977 patent is unenforceable because of inequitable conduct committed during its prosecution;

(m) That the Court find that the '854 patent is unenforceable because of inequitable conduct committed during its prosecution;

(n) That the Court award Wells Fargo reasonable attorneys' fees under 35 U.S.C. § 285;

(o) That the Court award Wells Fargo all costs and expenses it incurs in this action;

(p) That the Court award Wells Fargo such other and further relief that it deems just and proper.

DEMAND FOR JURY TRIAL

Wells Fargo hereby demands a trial by jury of all issues so triable in this action.

Dated: March 24, 2008

KEKER & VAN NEST, LLP

By: /s/ Eugene M. Paige
Eugene M. Paige
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WELLS FARGO & COMPANY

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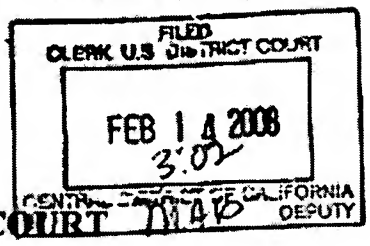
ORIGINAL



UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

PHOENIX SOLUTIONS, INC., a California corporation,

Plaintiff,

v.

THE DIRECTV GROUP, INC., a Delaware corporation,

Defendant.

CASE NO. CV08-984ODW(SSx)

AMENDED COMPLAINT FOR DAMAGES AND INJUNCTIVE RELIEF FOR INFRINGEMENT OF U.S. PATENT NOS. 6,615,172, 7,139,714, 7,050,977, AND 7,225,125 UNDER 35 U.S.C. § 271 AND DEMAND FOR JURY TRIAL PURSUANT TO FED. R. CIV. PROC., RULE 38

TROJAN LAW OFFICES

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Plaintiff, PHOENIX SOLUTIONS, INC. (hereinafter "Plaintiff" or "Phoenix"), hereby complains against Defendant, THE DIRECTV GROUP, INC. (hereinafter "Defendant" or "Directv"), as follows:

1. This is a civil action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 271 *et seq.*

I. THE PARTIES

2. Plaintiff is a corporation organized and existing under the laws of the State of California, with a place of business at 634 Georgia Avenue, Palo Alto, California, 94306.

3. Upon information and belief, Defendant is a corporation organized and existing under the laws of the State of Delaware with a place of business at 2230 East Imperial Highway, El Segundo, California, 90245.

II. FACTUAL BACKGROUND

4. Plaintiff is the owner by assignment of U.S. Patent Nos. 6,615,172, 7,139,714, 7,050,977 and 7,225,125 (hereinafter "Patents in Suit") directed to "speech recognition software".

5. Plaintiff Phoenix developed the next generation of speech recognition systems that give users the ability to have a verbal conversation with a computer about a subject on which the computer has been programmed to process and generate intelligent responses. One of the first applications of this new technology was its use in telephone customer service lines where the customer calls a computer and a "virtual customer service agent" answers the line and interacts with a caller using "natural speech" akin to a live person.

6. Phoenix encompasses the life work of a pioneer in the field of computer-based speech recognition, Dr. Ian Bennett. Originally from Jamaica, Dr. Bennett graduated with honors from the University of British Columbia and went on to receive his Master's and Doctorate degrees in electrical engineering from

Stanford University. While at Stanford, Dr. Bennett developed the first practical analog processor for speech compression. After graduation he held technical engineering positions with several high technology companies and contributed to device and product development. As a consultant to the Variable Speech Corp. of Tokyo, Japan, he contributed to the development of an analog speech compression VLSI speech processor used for audio compression in consumer speech recorders. In 1994, Dr. Bennett began the development of a natural language query system (NLQS). Subsequently, he founded Phoenix Solutions, where he guided the development of algorithms for statistics- and semantics-based signal processing of speech that allow a computer to take in natural speech questions and return answers that also sound like natural speech. Dr. Bennett developed various applications for his technology, including interactive conversational systems and interactive guides, intelligent tutoring systems and form-filling systems. Dr. Bennett is currently at the National Science Foundation serving as a Program Director within the Directorate of Engineering, Division of Industrial Innovation & Partnerships.

7. Defendant Directv is a provider of digital television entertainment services. Upon information and belief, in connection with its services, Defendant (and/or others on its behalf) established and operates a website and a number of customer support lines, including movie and/or event ordering lines and installer activation lines, that employ a natural language interactive voice response (IVR) system that includes a virtual agent (hereinafter interchangeably referred to as "IVR system"). Both the website and the IVR system access some of the same data located on a common server.

8. The Plaintiff's natural language IVR system is superior to conventional touch-tone systems because the caller can simply talk to the system using natural language. In contrast, touch-tone IVR systems require the caller to select from a series of choices using a more limited telephone keypad. IVR touch

tone systems are also less efficient since they require callers to listen to an entire menu of choices and wade through a series of menus before providing a response to the caller. Consumers hang up at a greater rate in frustration when they become lost in the maze of menus.

9. The alternative to touch tone menu systems is to employ live operators. When compared to live operators, the Plaintiff's IVR system is much more cost effective. Based upon industry data, it is estimated that Defendant's use of its current IVR system allows it to save approximately $9.2 million annually compared with its previous touch-tone system.

10. Upon information and belief, Defendant does not host its own system, meaning that many (or all) of the physical components used to implement the IVR system are located at a third party site. Defendant nonetheless provides specifications and data to such third party to configure and customize the IVR system for Defendant's use, and customers' needs. Further upon information and belief, the third party operates part or all of such IVR system on Defendant's behalf based on a contractual obligation to Defendant. Upon information and belief, Defendant's IVR system uses a combination of telephony hardware and computer server hardware that is specifically adapted by Defendant (and/or others on its behalf) to respond to spoken questions from callers concerning the Defendant's business. Such hardware uses supporting software that includes speech recognition and natural language engines used to understand the spoken questions from callers.

11. Upon information and belief, the speech recognition engine used by Defendant is distributed, so that some of the speech-processing operations for understanding callers are performed on a client computing system (such as telephony platform or other hardware) while other speech processing operations are performed on a separate server computing system. Upon information and belief, Defendant (and/or others on its behalf) configures such computing systems to

customize what speech processing operations will take place on such respective hardware systems to maximize certain characteristics of the system, and to regulate how speech data from the callers is transferred between such systems.

12. When customers/installers place calls to Defendant's IVR system, they can speak in a conversational style as if they were speaking to a real person. Defendant's interactive virtual agent responds to the caller's inquiries in real-time by providing responses in natural speech. The virtual agent has been taught natural language dialogues based on information concerning Defendant's products provided by the Defendant and incorporated into the software. In this manner, the virtual agent can understand inquiries posed by customers concerning Defendant's products, and give relevant responses.

13. Defendant's IVR system uses a speech recognition engine to break down the customer's/installer's questions into specific words understood by the IVR system. For example, the speech recognition engine could determine that the user has stated the name of a movie when the user uses the "Pay Per View" movie and event ordering process. Defendant controls precisely what specific words its IVR system will understand as part of its vocabulary by configuring (and/or having others configure on its behalf) certain aspects of such client computing system and/or server computing system.

14. Defendant's IVR system employs a natural language engine to understand the meaning of the specific words spoken by its customers. The IVR system, by understanding the meaning and context of specific words, may determine that the customer is asking about a service related matter. Defendant controls precisely what interpretation the IVR system should give to various words spoken by its customers/installers by configuring (and/or having others configure on its behalf) certain aspects of the client computing system and/or server computing system.

15. Based on determining the most likely meaning of the customer's/installer's statement, the interactive virtual agent has a specific response. The answer may take the form of an audible response from the agent, sending an activation signal to the customer's Directv system, or it may take the form of the IVR system routing the caller to a live person working within the appropriate department (such as the service department). In all instances, Defendant alone controls precisely what responses and actions virtual agent takes, and has configured (and/or has had others configure on its behalf) certain aspects of such client computing system and/or server computing system to provide such desired responses or actions.

16. Upon information and belief, Defendant also configured and controlled (and/or has had others configure and/or control on its behalf) other aspects of the virtual agent's overall behavior, including among other things, the gender, apparent age, speech rate, prosody, style and rate of response. These parameters are selected and controlled by Defendant to increase customer satisfaction with the customer support line.

17. Upon information and belief, Defendant (and/or others on its behalf) designed, customized and selected the personality exhibited by the virtual agent as well. This electronic persona was specifically selected to be appealing and attractive to Defendant's customers and to maximize utilization of the IVR system by such customers.

18. Upon information and belief, the information used by Defendant's IVR system (including e.g., the grammar used, specific questions to which it can respond, the interpretation of questions, and the answers to be given to customers) were derived by Defendant (and/or others on its behalf) from collecting and studying data from actual calls made to Defendant's customer support line. Based on this, Plaintiff believes that Defendant (and/or others on its behalf) has trained the

IVR system with Defendant's call center data that is unique to Defendant's business. As a result, the IVR system is tailored to respond with appropriate answers to questions posed by Defendant's customer base.

19. Accordingly, Defendant's IVR system has been customized with customer content data that is not available from a third party. This Defendant-specific content data is critically important to the behavior and operation of Defendant's IVR system, since without it the IVR system would not know what words to recognize from a caller's utterance, how to determine the meaning of such words, and/or what answer to give to the caller as a response.

20. Defendant's IVR system, as noted above, is a combination of components, including at least some hardware, software and content which it obtained from third parties (third party components). Nonetheless, and on information and belief, Defendant is responsible for and has caused such third party components to be combined, adapted and configured (including with such Defendant-specific content) in accordance with specific performance, content requirements and scenarios of the Defendant's customer/installer support operations.

21. Consequently, and on further information and belief, the current structure and operation of Defendant's IVR system is a result of content contributions, performance specifications and operational specifications provided by Defendant and configuration/modification of third party components made by Defendant (and/or others on its behalf). Such third party components – as currently available from such third parties - by themselves would not be sufficient to implement Defendant's IVR system without Defendant's cooperation, contributions and actions, including Defendant's provision of the Defendant-specific content data.

22. On or about February 20, 2007, Plaintiff sent a letter to Defendant, stating that the IVR system is covered by one or more claims of the Patents in Suit. In that letter, Plaintiff included a number of supporting materials to explain its position on the Patents, and further extended an offer to license the Patents in Suit to Defendant. Despite almost a year of efforts and requests by Plaintiff in attempt to resolve the matter, Defendant has refused to meet or respond in good faith to Plaintiff's contentions that Defendant needs a license to the aforementioned Phoenix Patents. Defendant's continued delay in responding in any meaningful way to Plaintiff's licensing offer or to the charge of infringement necessitated the filing of this action.

III. JURISDICTION AND VENUE

23. This Court has original subject matter jurisdiction over Plaintiff's patent infringement claim pursuant to 28 U.S.C. §1338(a).

24. This Court has personal jurisdiction over Defendant because Defendant's corporate headquarters are located in El Segundo, CA.

25. Venue properly lies in the Central District of California pursuant to 28 U.S.C. §1391 and §1400, because the acts complained of herein have been committed and are being committed in this Judicial District and Defendant is subject to personal jurisdiction within the District.

IV. FIRST COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 6,615,172

26. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

27. Plaintiff is the assignee of the U.S. Patent No. 6,615,172 ("the '172 Patent"), attached hereto as Exhibit 1, entitled "Intelligent Query Engine For Processing Voice Based Queries". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '172 Patent.

28. Defendant has violated Plaintiff's patent rights by operating (and/or directing and causing third parties to operate) an IVR system covered by at least one claim of the '172 Patent. Directv's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

29. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

30. The infringement of the '172 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

V. SECOND COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,139,714

31. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

32. Plaintiff is the assignee of the U.S. Patent No. 7,139,714 ("the '714 Patent"), attached hereto as Exhibit 2, entitled "Adjustable Resource Based Speech Recognition System". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '714 Patent.

33. Defendant has violated Plaintiff's patent rights by operating (and/or directing and causing third parties to operate) an IVR system covered by at least one claim of the '714 Patent. Directv's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

34. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

35. The infringement of the '714 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

VI. THIRD COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,050,977

36. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

37. Plaintiff is the assignee of the U.S. Patent No. 7,050,977 ("the '977 Patent"), attached hereto as Exhibit 3, entitled "Speech-Enabled Server For Internet Website and Method". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '977 Patent.

38. Defendant has violated Plaintiff's patent rights by operating (and/or directing and causing third parties to operate) an IVR system covered by at least one claim of the '977 Patent. Directv's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

39. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

40. The infringement of the '977 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

VII. FOURTH COUNT FOR INFRINGEMENT OF UNITED STATES PATENT NO. 7,225,125

41. Plaintiff hereby incorporates by reference the allegations contained in paragraphs 1 through 25.

42. Plaintiff is the assignee of the U.S. Patent No. 7,225,125 ("the '125 Patent"), attached hereto as Exhibit 4, entitled "Speech Recognition System Trained With Regional Speech Characteristics". Plaintiff owns and has standing and capacity to sue and recover damages for infringement under the '125 Patent.

43. Defendant has violated Plaintiff's patent rights by operating (and/or

directing and causing third parties to operate) an IVR system covered by at least one claim of the '125 Patent. Directv's infringing IVR system has not been manufactured or authorized in any manner by the Plaintiff.

44. As a legal consequence of Defendant's infringement, Plaintiff is entitled to compensation for no less than a reasonable royalty, as well as pre-judgment interest and a preliminary and permanent injunction. In the event that the Court does not exercise its equitable discretion to award a permanent injunction, then Plaintiff is entitled to a judgment that includes a sum equal to the total projected value of a compulsory license for the life of the patent at a royalty rate to be determined by a jury, discounted to present value, to compensate Plaintiff for future infringement.

45. The infringement of the '125 Patent has been willful in that Defendant is fully aware of Plaintiff's rights, yet has continued to use the infringing IVR system in violation of the patent laws without a good faith basis for believing it does not infringe or the patent is invalid. This intentional refusal to respect Plaintiff's patent rights constitutes willful infringement under 35 U.S.C. §§ 284 and 285, thereby entitling Plaintiff to treble damages and attorneys' fees.

VIII. DEMAND FOR JURY TRIAL

46. Plaintiff hereby exercises its right to a jury trial under the Seventh Amendment to the United States Constitution, and pursuant to Fed. R. Civ. Proc., Rule 38, demands a jury trial in accordance therewith.

IX. PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for:

a. A preliminary injunction, barring Defendant and all of its agents, officers, attorneys, successors, and assigns from manufacturing, importing or using any system (or components thereof) that infringes upon the '172, '714, '977, and the '125 Patents;

b. A permanent injunction, barring Defendant and all of its agents, officers, successors and assigns from manufacturing, importing or using any system (or components thereof) that infringes upon the '172, '714, '977, and the '125 Patents;

c. That Defendant be required to account to Plaintiff for all savings and revenues realized by Defendant and any subsidiary and any partner company of Defendant from the use of IVR systems infringing the '172, '714, '977, and the '125 Patents;

d. A judgment for compensatory damages, not less than reasonable royalty, suffered as a result of the patent infringement as well as prejudgment interest, and a sum equal to a the total projected value of a compulsory license for the life of the patents, discounted to present value, to compensate Plaintiff for future infringement in the event that a permanent injunction is not awarded. Total compensatory damages for past, present and future infringement of not less than $42.5 million;

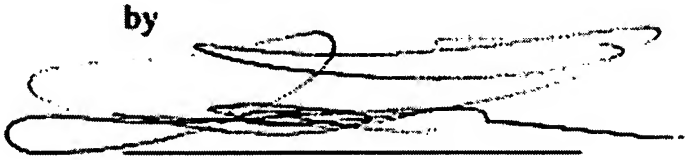
e. Treble damages and attorneys' fees pursuant to 35 U.S.C. §§ 284 and 285 for willful infringement of the '172, '714, '977, and the '125 Patents by Defendant; and,

f. Any and all other relief that the Court deems proper.

Respectfully submitted,

TROJAN LAW OFFICES

by



Dated: February 14, 2008

R. Joseph Trojan
Attorney for Plaintiff,
PHOENIX SOLUTIONS, INC.

EXHIBIT 1

US006615172B1

(12) **United States Patent**
Bennett et al.

(10) **Patent No.: US 6,615,172 B1**
(45) **Date of Patent: Sep. 2, 2003**

(54) **INTELLIGENT QUERY ENGINE FOR PROCESSING VOICE BASED QUERIES**

(75) Inventors: **Ian M. Bennett**, Palo Alto, CA (US); **Bandi Ramesh Babu**, Andra Pradesh State (IN); **Kishor Markhandikar**, Karnataka State (IN); **Pallaki Gururaj**, Karnataka State (IN)

(73) Assignee: **Phoenix Solutions, Inc.**, Palo Alto, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/439,060**

(22) Filed: **Nov. 12, 1999**

(51) Int. Cl.[7] G10L 15/18; G10L 21/06; G06F 17/27

(52) U.S. Cl. 704/257; 704/9; 704/275; 704/270.1

(58) Field of Search 704/9, 200, 200.1, 704/251-257, 270-275

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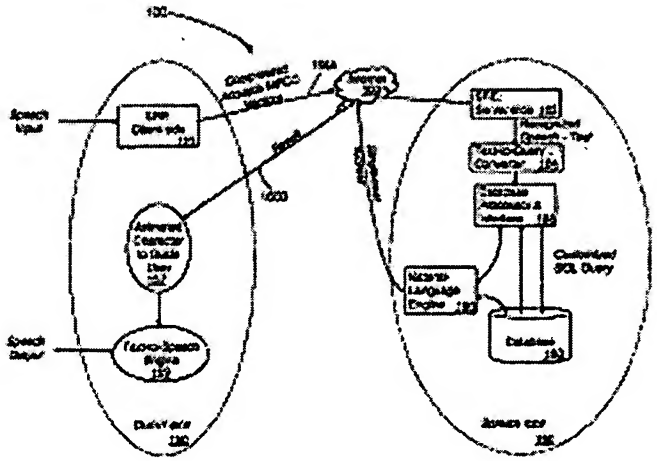
Primary Examiner—Doris H. To
Assistant Examiner—Daniel Nolan
(74) *Attorney, Agent, or Firm*—J. Nicholas Gross

(57) **ABSTRACT**

An intelligent query system for processing voiced-based queries is disclosed. This distributed client-server system, typically implemented on an Intranet or over the Internet accepts a user's queries at his/her computer, PDA or workstation using a speech input interface. After converting the user's query from speech to text, a 2-step algorithm employing a natural language engine, a database processor and a full-text SQL database is implemented to find a single answer that best matches the user's query. The system, as implemented, accepts environmental variables selected by the user and is scalable to provide answers to a variety and quantity of user-initiated queries.

29 Claims, 31 Drawing Sheets



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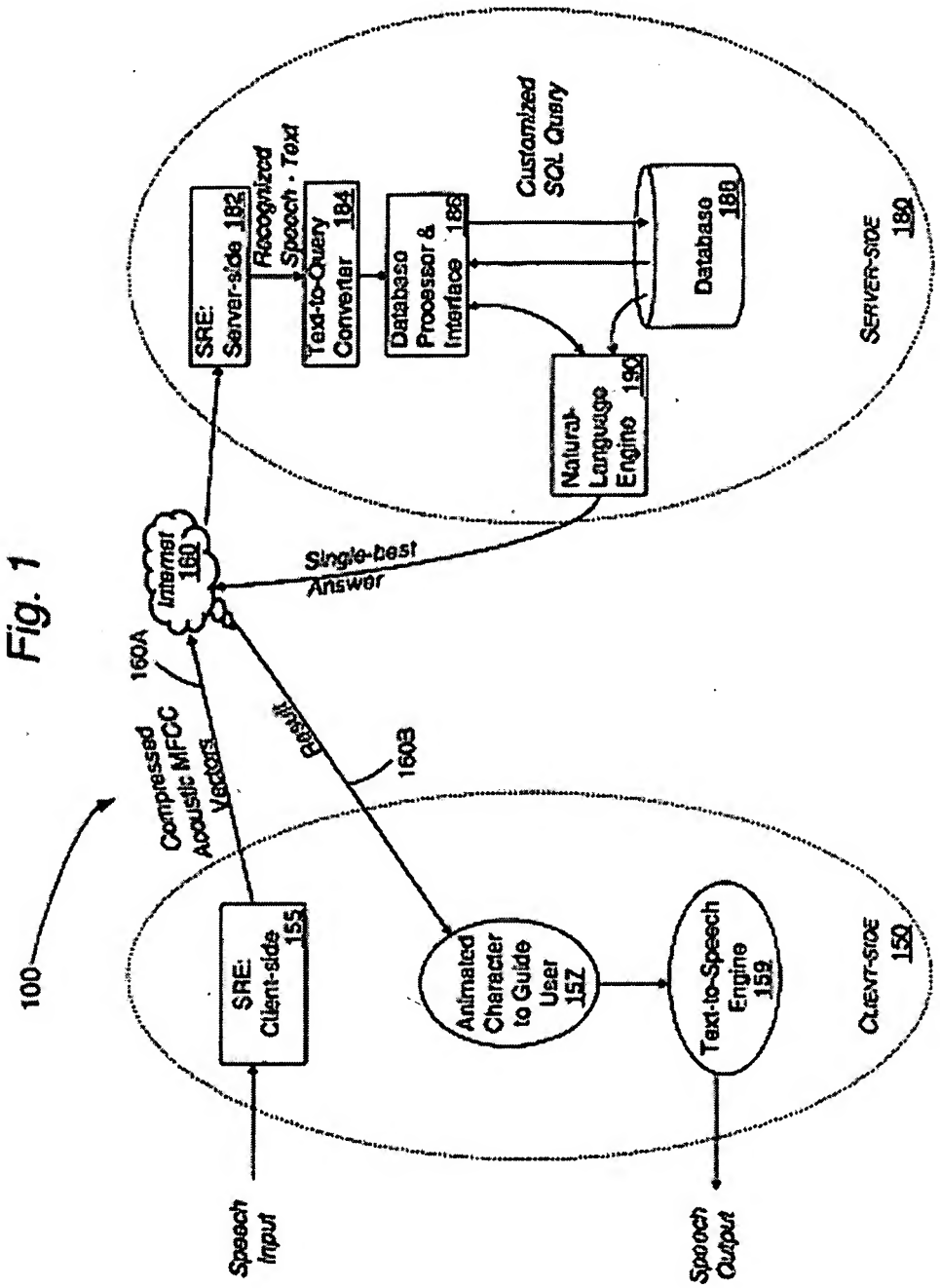
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160A
Internet 160
Result
160B
Single-best Answer
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Database Processor & Interface 186
Customized SQL Query
Database 188
Natural-Language Engine 190
SERVER-SIDE 180
Animated Character to Guide User 157
Text-to-Speech Engine 159
CLIENT-SIDE 150
Speech Input
Speech Output

Fig. 1

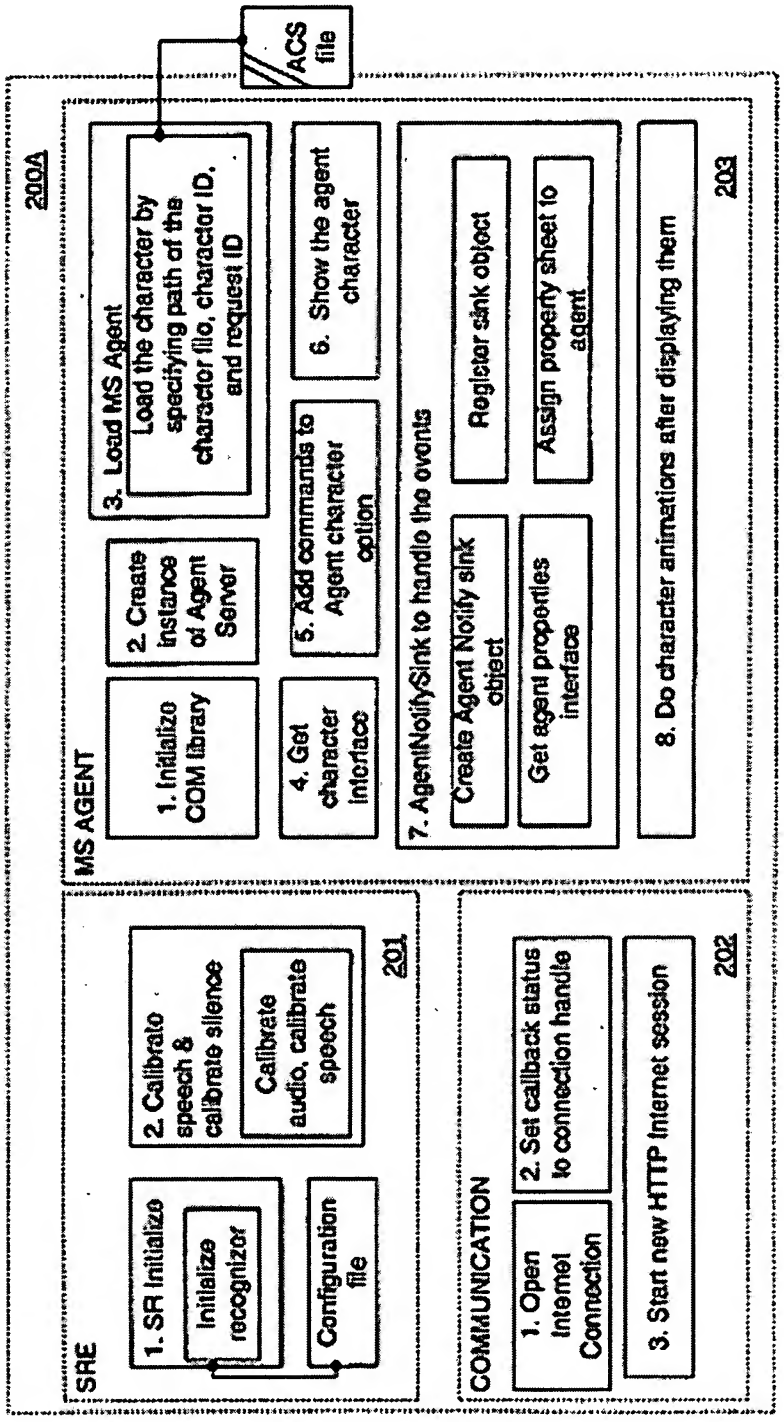


Figure 2A
CLIENT-SIDE SYSTEM LOGIC

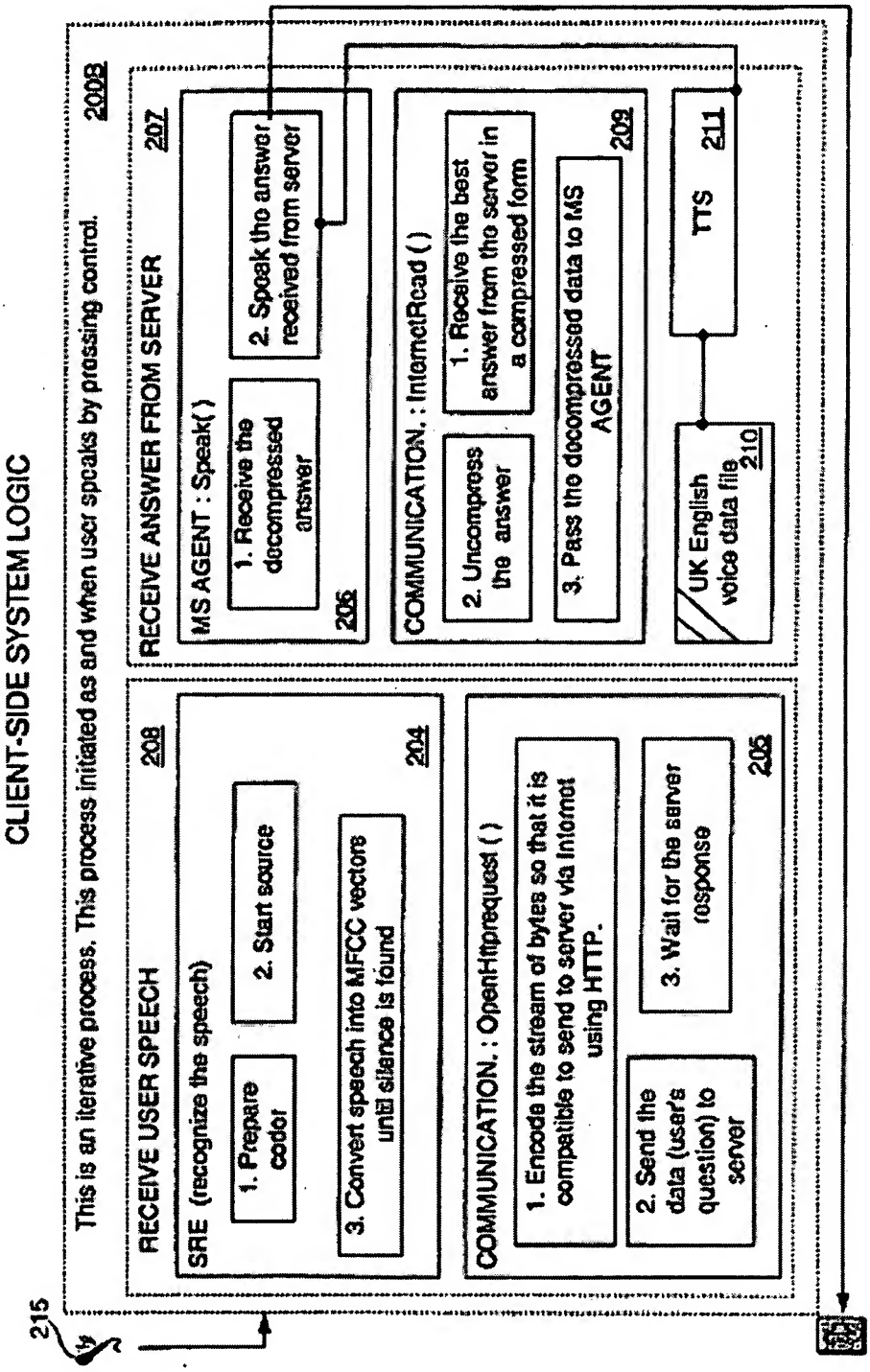


Figure 2B
CLIENT-SIDE SYSTEM LOGIC

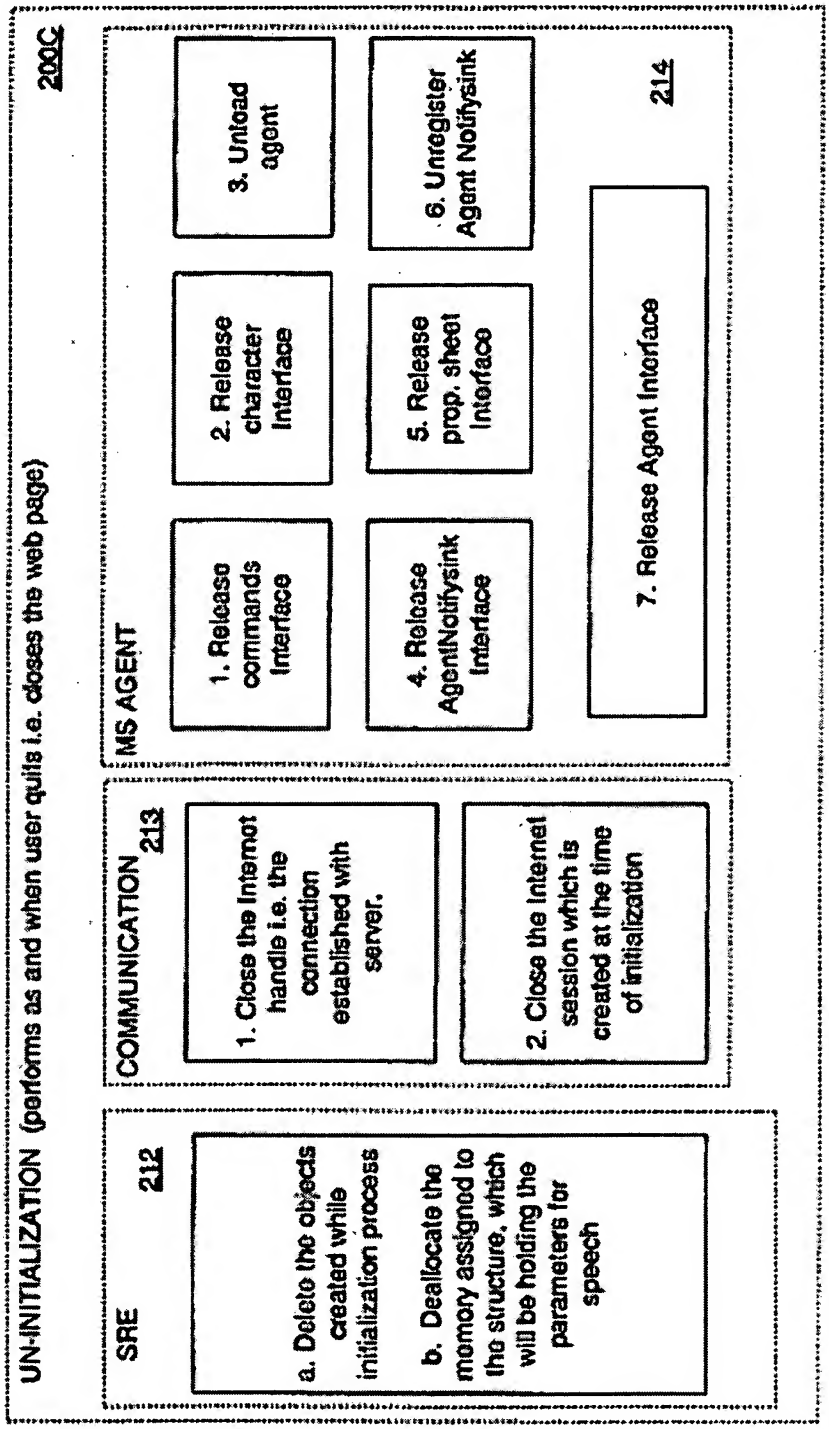


Figure 2C
CLIENT-SIDE SYSTEM LOGIC

Fig. 2D

Client-side Initialization

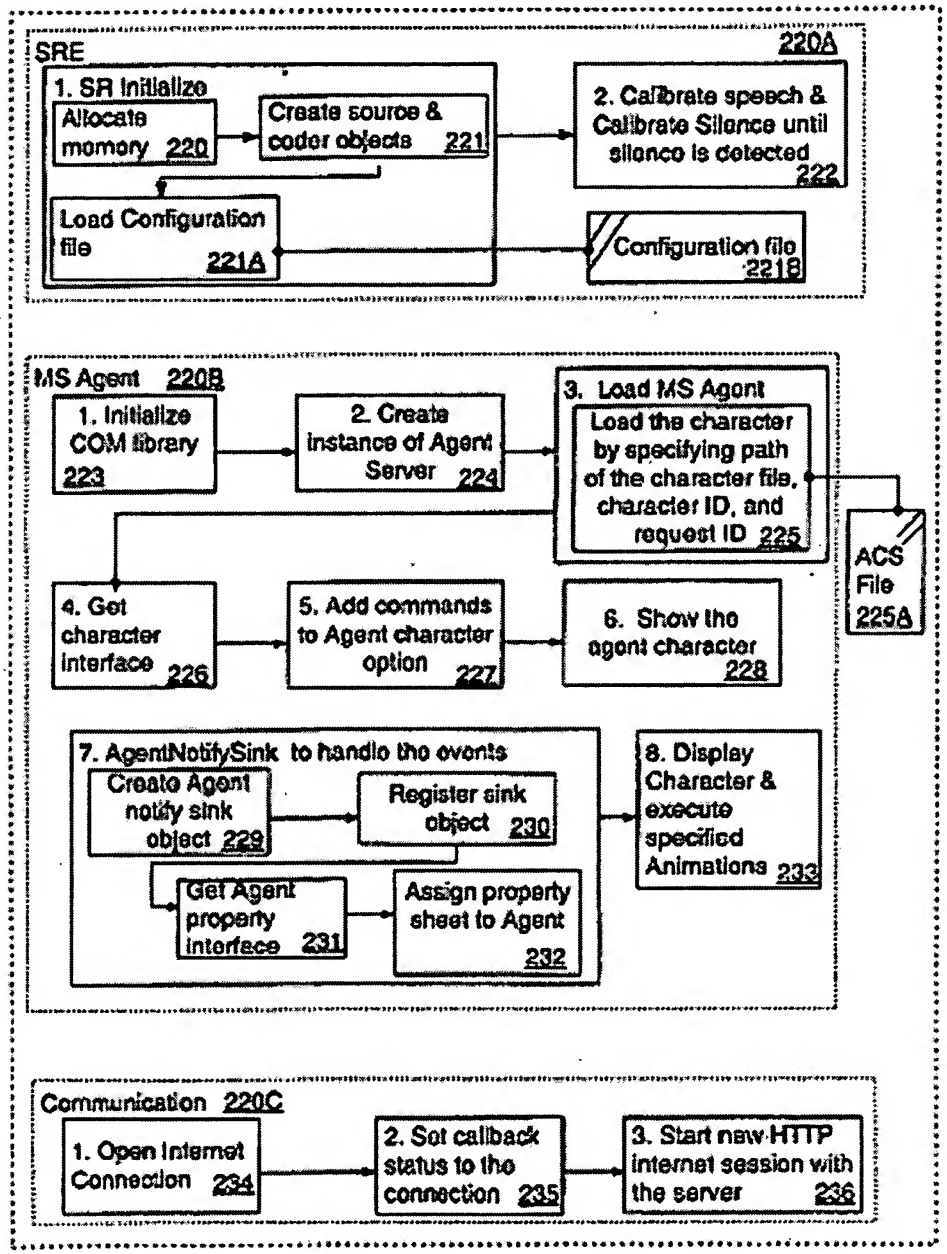


Fig. 3

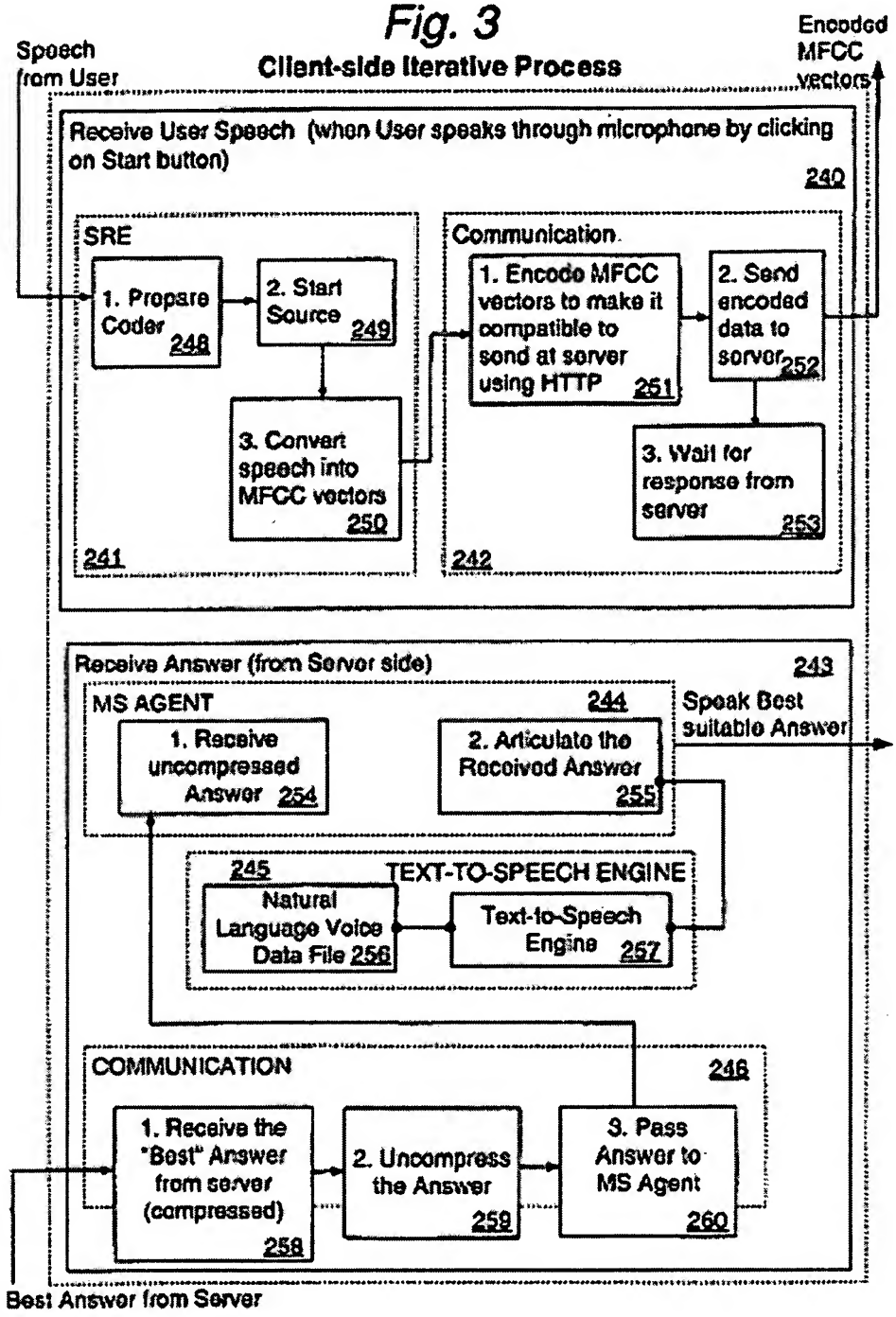
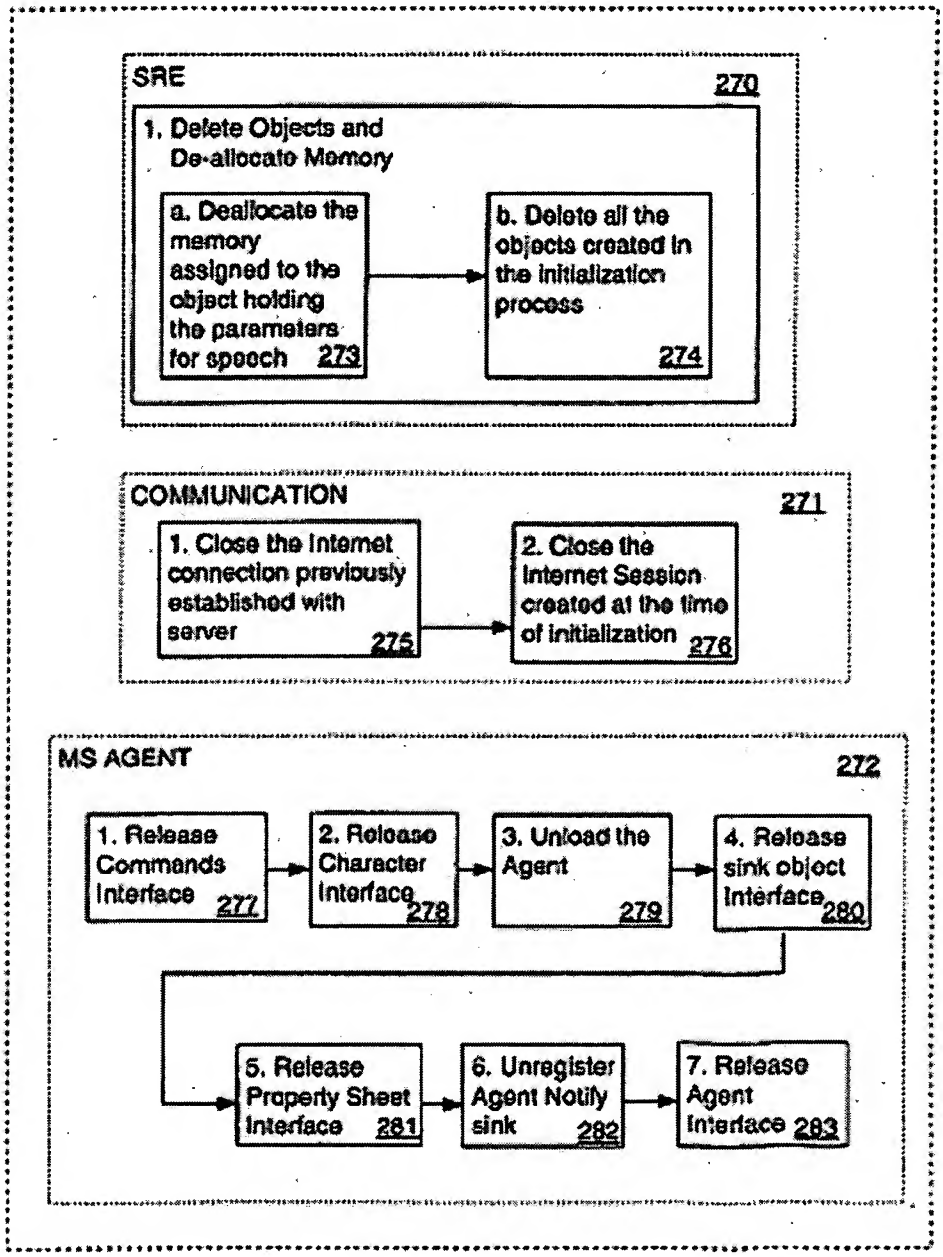

Client-side Iterative Process
Speech from User
Encoded MFCC vectors
Receive User Speech (when User speaks through microphone by clicking on Start button)
240
SRE
1. Prepare Coder 248
2. Start Source 249
3. Convert speech into MFCC vectors 250
241
Communication
1. Encode MFCC vectors to make it compatible to send at server using HTTP 251
2. Send encoded data to server 252
3. Wait for response from server 253
242
Receive Answer (from Server side)
243
MS AGENT
244
1. Receive uncompressed Answer 254
2. Articulate the Received Answer 255
Speak Best suitable Answer
245
TEXT-TO-SPEECH ENGINE
Natural Language Voice Data File 256
Text-to-Speech Engine 257
COMMUNICATION
246
1. Receive the "Best" Answer from server (compressed) 258
2. Uncompress the Answer 259
3. Pass Answer to MS Agent 260
Best Answer from Server

Fig. 4

Client-side Un-Initialization



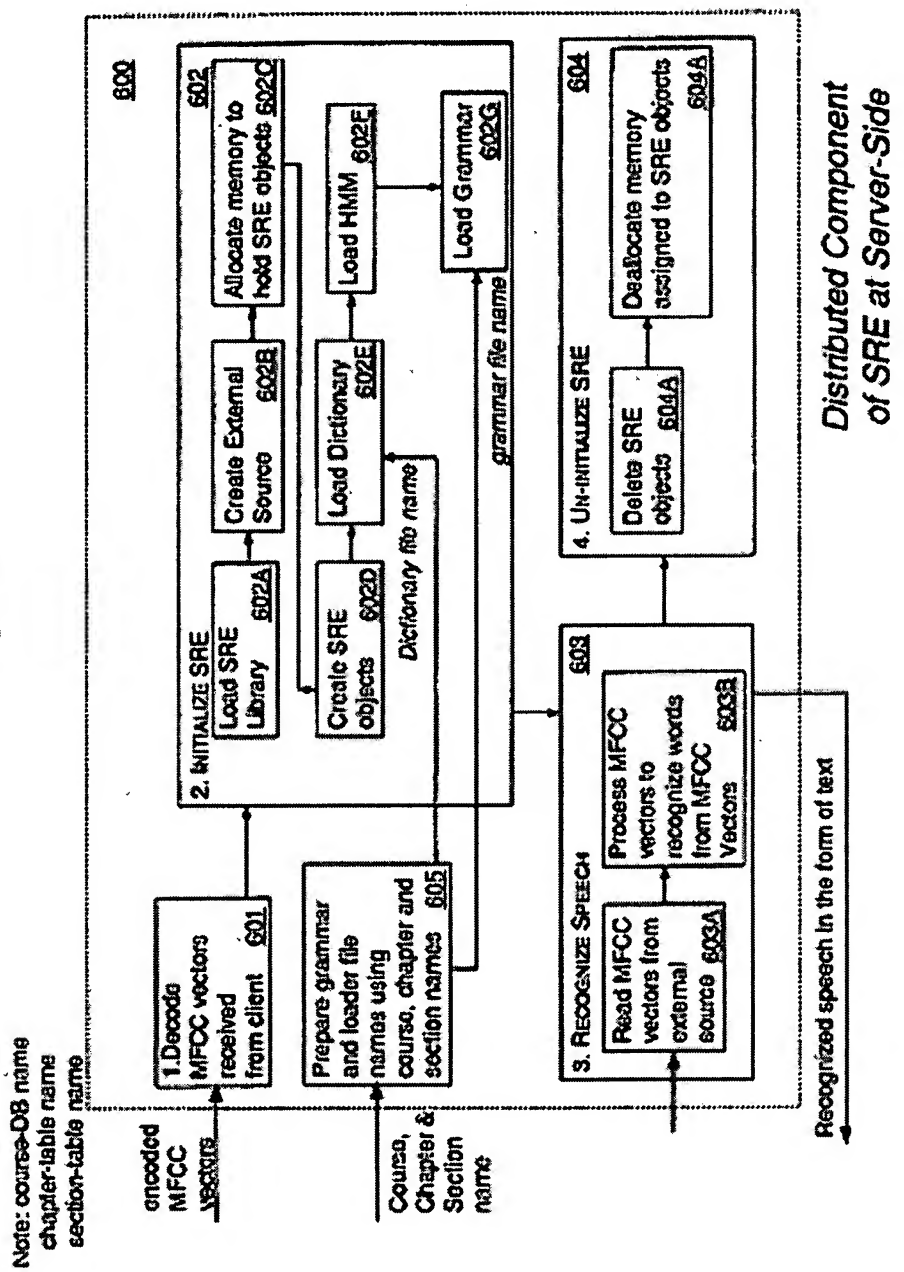

Distributed Component of SRE at Server-Side
600
602
2. INITIALIZE SRE
Load SRE Library 602A
Create External Source 602B
Allocate memory to hold SRE objects 602C
Create SRE objects 602D
Load Dictionary 602E
Load HMM 602F
Load Grammar 602G
603
3. RECOGNIZE SPEECH
Read MFCC vectors from external source 603A
Process MFCC vectors to recognize words from MFCC Vectors 603B
604
4. UN-INITIALIZE SRE
Delete SRE objects 604A
Deallocate memory assigned to SRE objects 604A
1.Decode MFCC vectors received from client 601
Prepare grammar and loader file names using course, chapter and section names 605
dictionary file name
grammar file name
encoded MFCC vectors
Course, Chapter & Section name
Recognized speech in the form of text
Note: course-DB name
chapter-table name
section-table name

Fig. 4A

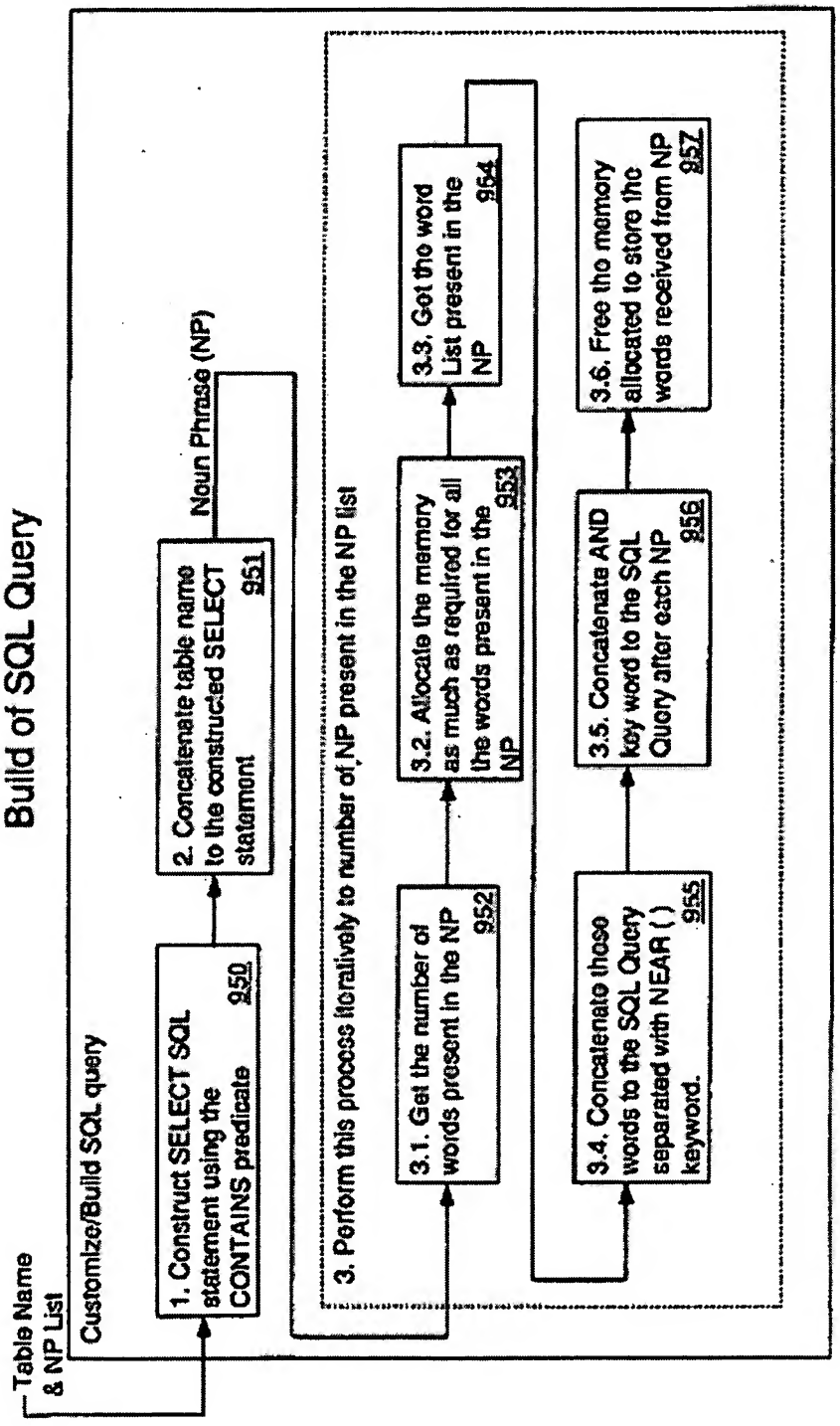


Fig. 4B
Build of SQL Query

Fig. 4C

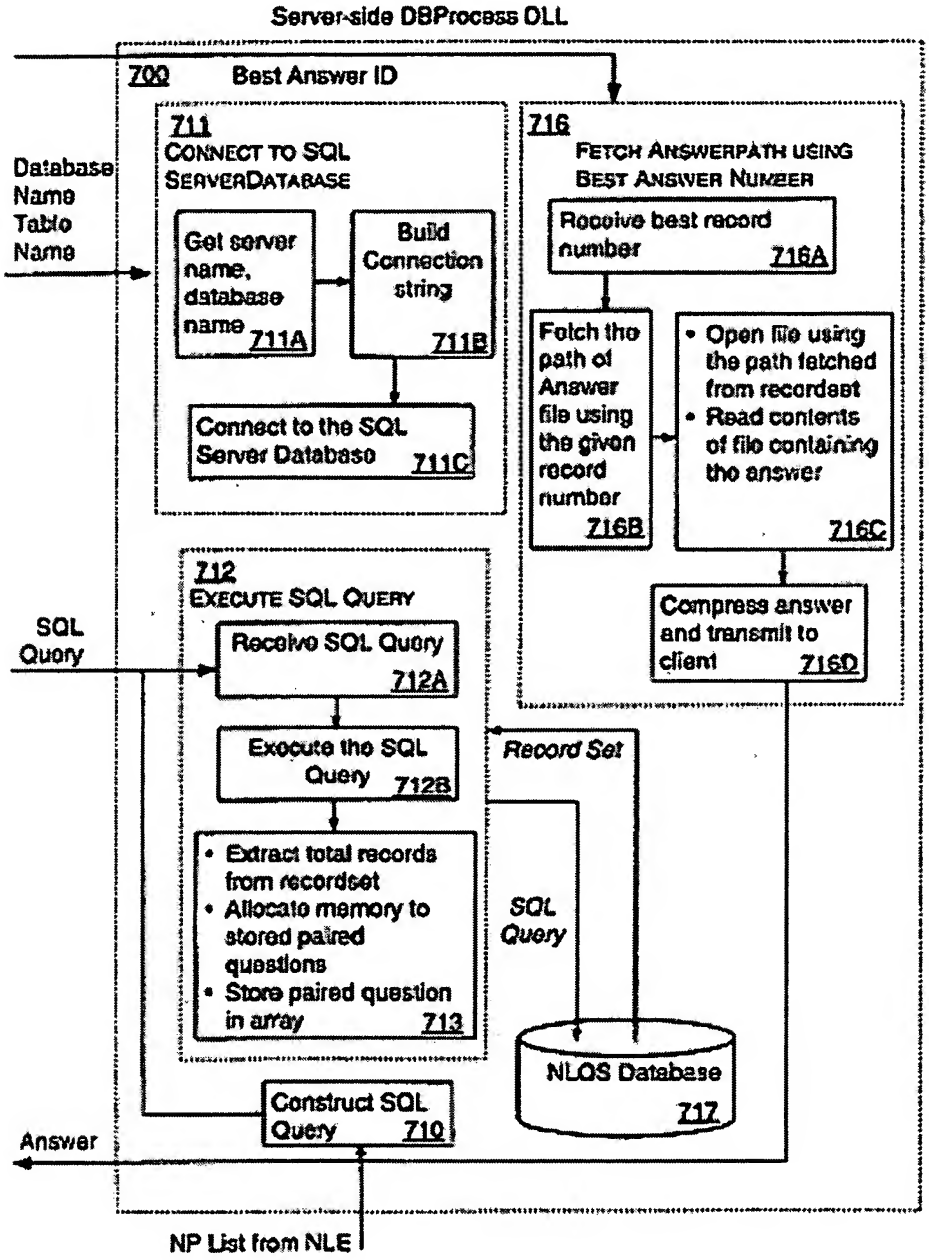
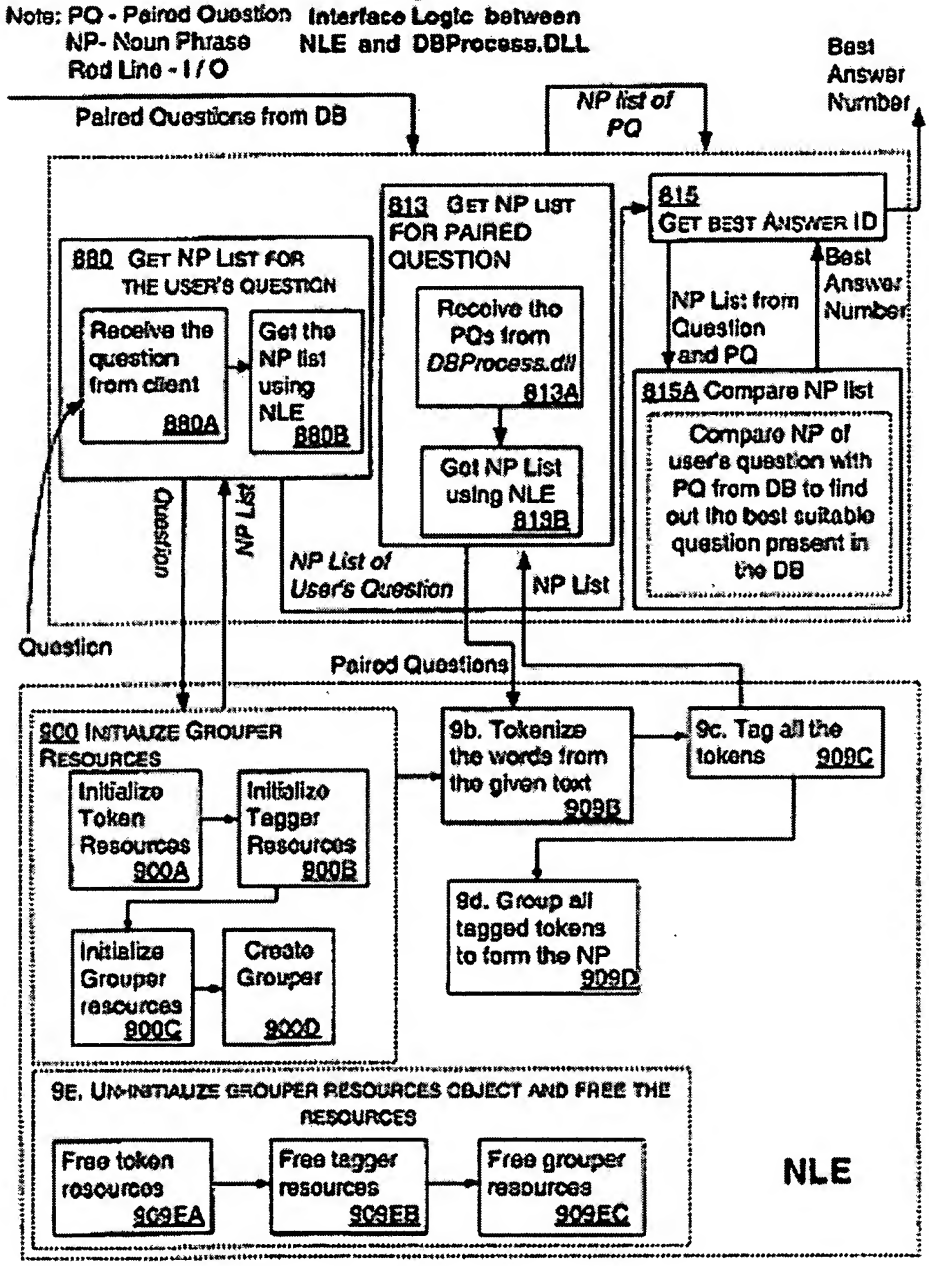

Server-side DBProcess DLL
700 Best Answer ID
711 CONNECT TO SQL SERVERDATABASE
Get server name, database name 711A
Build Connection string 711B
Connect to the SQL Server Database 711C
716 FETCH ANSWERPATH USING BEST ANSWER NUMBER
Receive best record number 716A
Fetch the path of Answer file using the given record number 716B
• Open file using the path fetched from recordset
• Read contents of file containing the answer 716C
Compress answer and transmit to client 716D
712 EXECUTE SQL QUERY
Receive SQL Query 712A
Execute the SQL Query 712B
• Extract total records from recordset
• Allocate memory to stored paired questions
• Store paired question in array 713
Record Set
SQL Query
NLOS Database 717
Construct SQL Query 710
Database Name Table Name
SQL Query
Answer
NP List from NLE

Fig. 4D


Note: PQ - Paired Question
NP- Noun Phrase
Red Line - I / O
Interface Logic between NLE and DBProcess.DLL
Paired Questions from DB
NP list of PQ
Best Answer Number
880 GET NP LIST FOR THE USER'S QUESTION
Receive the question from client 880A
Get the NP list using NLE 880B
813 GET NP LIST FOR PAIRED QUESTION
Receive the PQs from DBProcess.dll 813A
Get NP List using NLE 813B
815 GET BEST ANSWER ID
NP List from Question and PQ
Best Answer Number
815A Compare NP list
Compare NP of user's question with PQ from DB to find out the best suitable question present in the DB
Question
NP List
NP List of User's Question
NP List
Question
Paired Questions
900 INITIAUZE GROUPER RESOURCES
Initialize Token Resources 900A
Initialize Tagger Resources 900B
Initialize Grouper resources 900C
Create Grouper 900D
9b. Tokenize the words from the given text 909B
9c. Tag all the tokens 909C
9d. Group all tagged tokens to form the NP 909D
9E. UN-INITIAUZE GROUPER RESOURCES OBJECT AND FREE THE RESOURCES
Free token resources 909EA
Free tagger resources 909EB
Free grouper resources 909EC
NLE

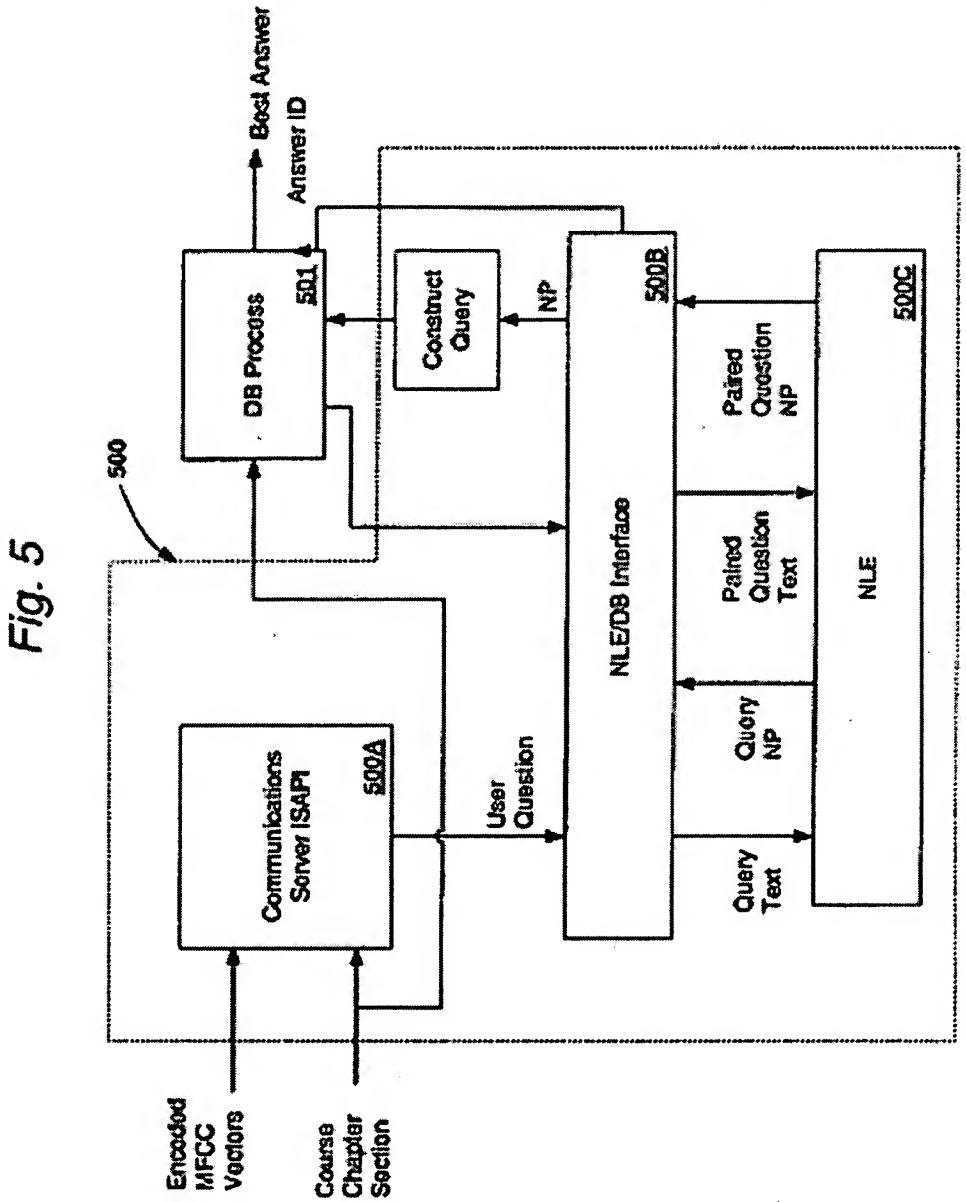

Best Answer
Answer ID
DB Process
501
Construct Query
NP
500B
NLE/DB Interface
Paired Question NP
Paired Question Text
Query NP
Query Text
500C
NLE
500
Communications Server ISAPI
500A
User Question
Encoded MFCC Vectors
Course Chapter Section

Fig. 5

Fig.6

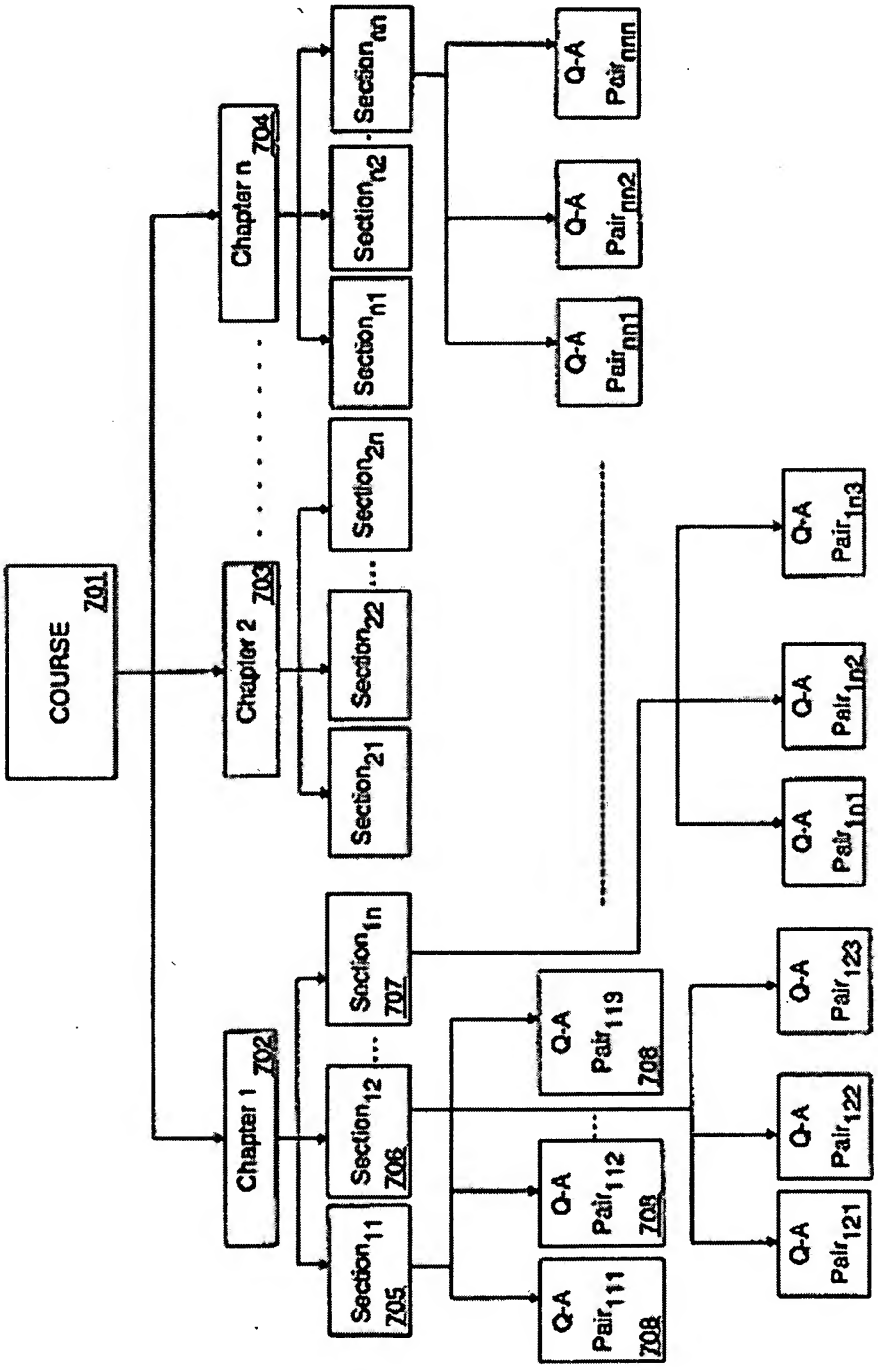

COURSE
701
Chapter 1
702
Chapter 2
703
Chapter n
704
Section11
705
Section12
706
Section1n
707
Section21
Section22
Section2n
Sectionn1
Sectionn2
Sectionnn
Q-A Pair111
708
Q-A Pair112
709
Q-A Pair119
Q-A Pair121
Q-A Pair122
Q-A Pair123
Q-A Pair1n1
Q-A Pair1n2
Q-A Pair1n3
Q-A Pairnn1
Q-A Pairnn2
Q-A Pairnnn

Fig. 7A

Field Name 701A	Data Type 702A	Size 703A	Null 704A	Primary Key 705A	Indexed? 706A
ChapterName 707A	Varchar	255	No	No	Yes
SectionName 708A	Varchar	255	No	No	Yes

Fig.7B

Field Name 720	Data Type 721	Size 722	Null 723	Primary Key 724	Indexed? 725
Chapter_ID 726	Integer		No	Yes	Yes
Answer_ID 727	Char	5	No	UNIQUE	Yes
Section_Name 728	Varchar	255	No	UNIQUE	Yes
Answer_Title 729	Varchar	255	Yes	No	Yes
PairedQuestion 730	Text	16	No	No	Yes (Full-Text)
AnswerPath 731	Varchar	255	No	No	Yes
Creator 732	Varchar	50	No	No	Yes
Date_of_Creation 733	Date	-	No	No	Yes
Date_of_Modification 734	Date	-	No	No	Yes

Fig. 7C

Field 720	Description 735
AnswerID 727	An integer - automatically incremented for user convenience
Section_Name 728	Name of section to which the particular record belongs. This field along with AnswerID has to be made primary key
Answer_Title 729	A short description of the answer
PairedQuestion 730	Contains one or more combinations of questions for the related answer whose path is stored in the next column AnswerPath
AnswerPath 731	Contains the path of text file, which contains the answer to the related questions stored in the previous column
Creator 732	Name of content creator
Date_of_Creation 733	Date on which content has been added
Date_of_Modification 734	Date on which content has been changed or modified

Fig. 7D

FIELD 740	DATA TYPE 741	SIZE 742	NULL 743	PRIMARY KEY 744	INDEXED 745
Answer_ID 746	Char	5	No	Yes	Yes
Answer_Title 747	Varchar	255	Yes	No	No
PairedQuestion 748	Text	16	No	No	Yes (Full-Text)
Answer_Path 749	Varchar	255	No	No	No
Creator 750	Varchar	50	No	No	No
Date_of_Creation 751	Date	-	No	No	No
Date_of_Modification 752	Date	-	No	No	No

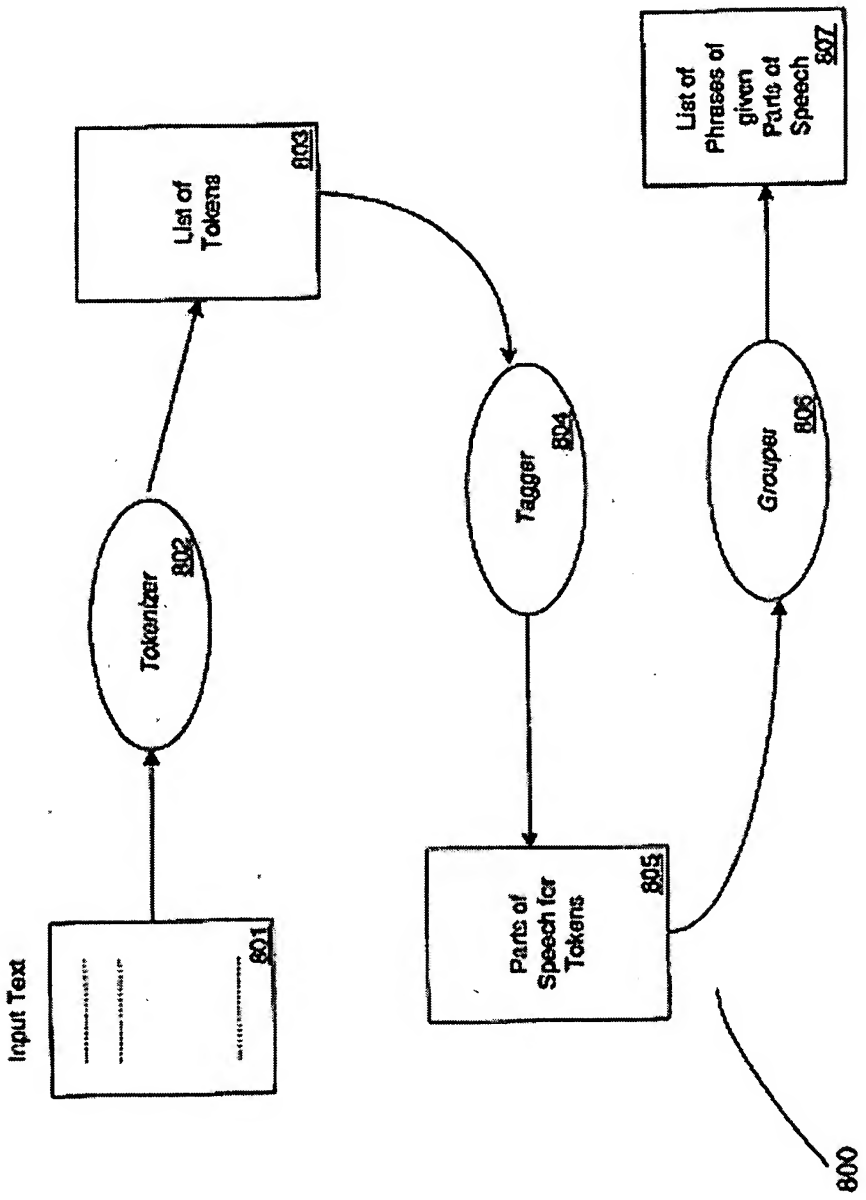

Input Text
801
Tokenizer
802
List of Tokens
803
Tagger
804
Parts of Speech for Tokens
805
Grouper
806
List of Phrases of given Parts of Speech
807
800

Fig. 8

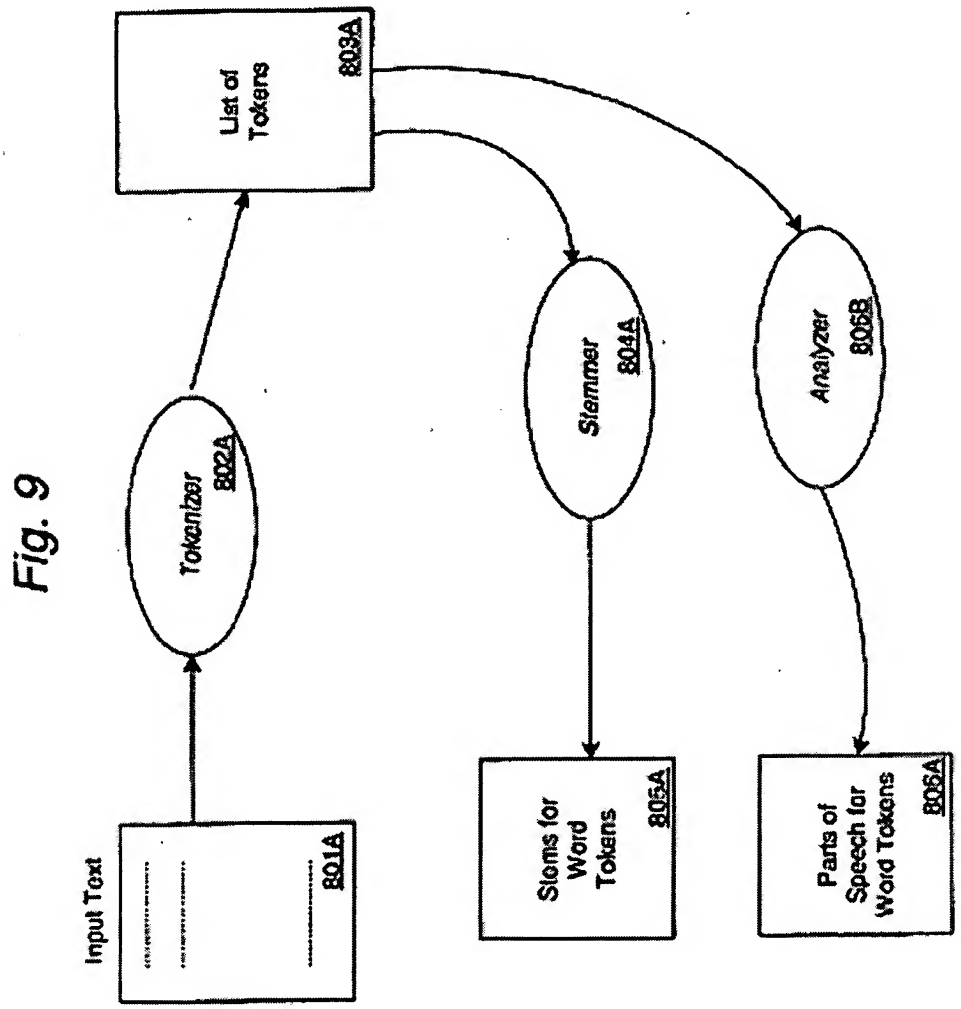

Input Text
801A
Tokenizer
802A
List of Tokens
803A
Stemmer
804A
Analyzer
806B
Stems for Word Tokens
805A
Parts of Speech for Word Tokens
806A

Fig. 9

Fig. 10

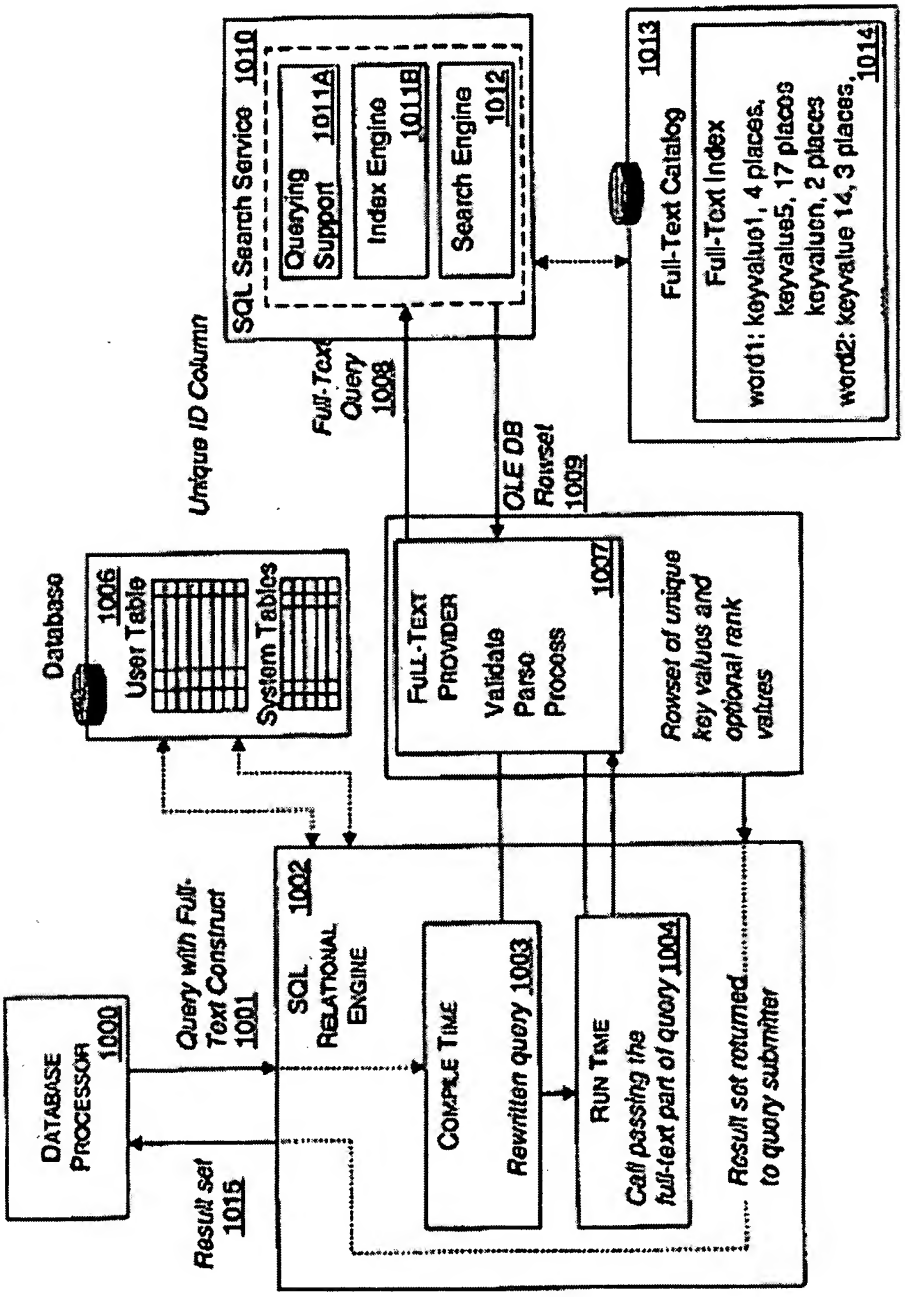

DATABASE PROCESSOR 1000
Query with Full-Text Construct 1001
Result set 1015
SQL RELATIONAL ENGINE 1002
COMPILE TIME
Rewritten query 1003
RUN TIME
Call passing the full-text part of query 1004
Result set returned to query submitter
Database
User Table 1006
System Tables
Unique ID Column
FULL-TEXT PROVIDER
Validate
Parse
Process
1007
Rowset of unique key values and optional rank values
OLE DB Rowset 1009
Full-Text Query 1008
SQL Search Service 1010
Querying Support 1011A
Index Engine 1011B
Search Engine 1012
Full-Text Catalog 1013
Full-Text Index
word1: keyvalue1, 4 places, keyvalue5, 17 places
keyvalue8, 2 places
word2: keyvalue 14, 3 places, 1014

Fig. 11A

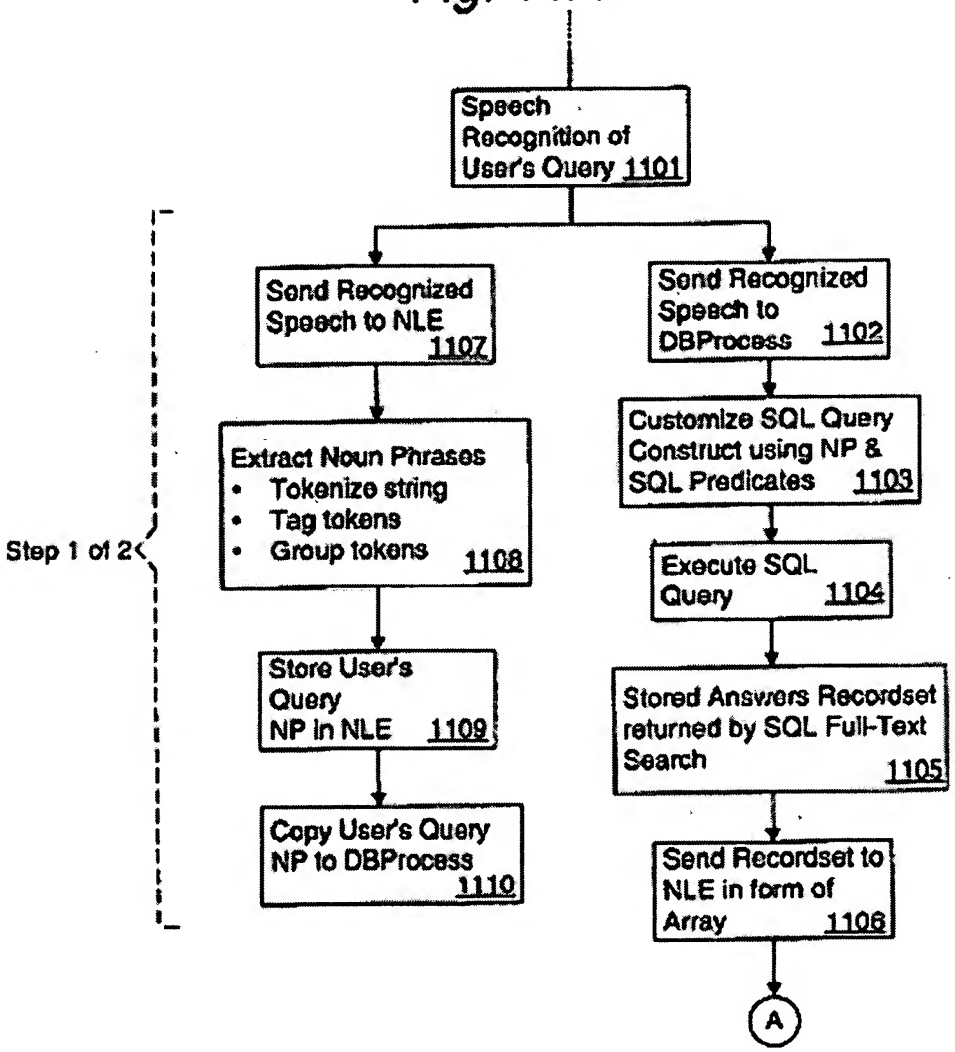

Speech Recognition of User's Query 1101
Send Recognized Speech to NLE 1107
Send Recognized Speech to DBProcess 1102
Extract Noun Phrases
• Tokenize string
• Tag tokens
• Group tokens 1108
Customize SQL Query Construct using NP & SQL Predicates 1103
Execute SQL Query 1104
Store User's Query NP in NLE 1109
Stored Answers Recordset returned by SQL Full-Text Search 1105
Copy User's Query NP to DBProcess 1110
Send Recordset to NLE in form of Array 1106
A
Step 1 of 2

Fig. 11B

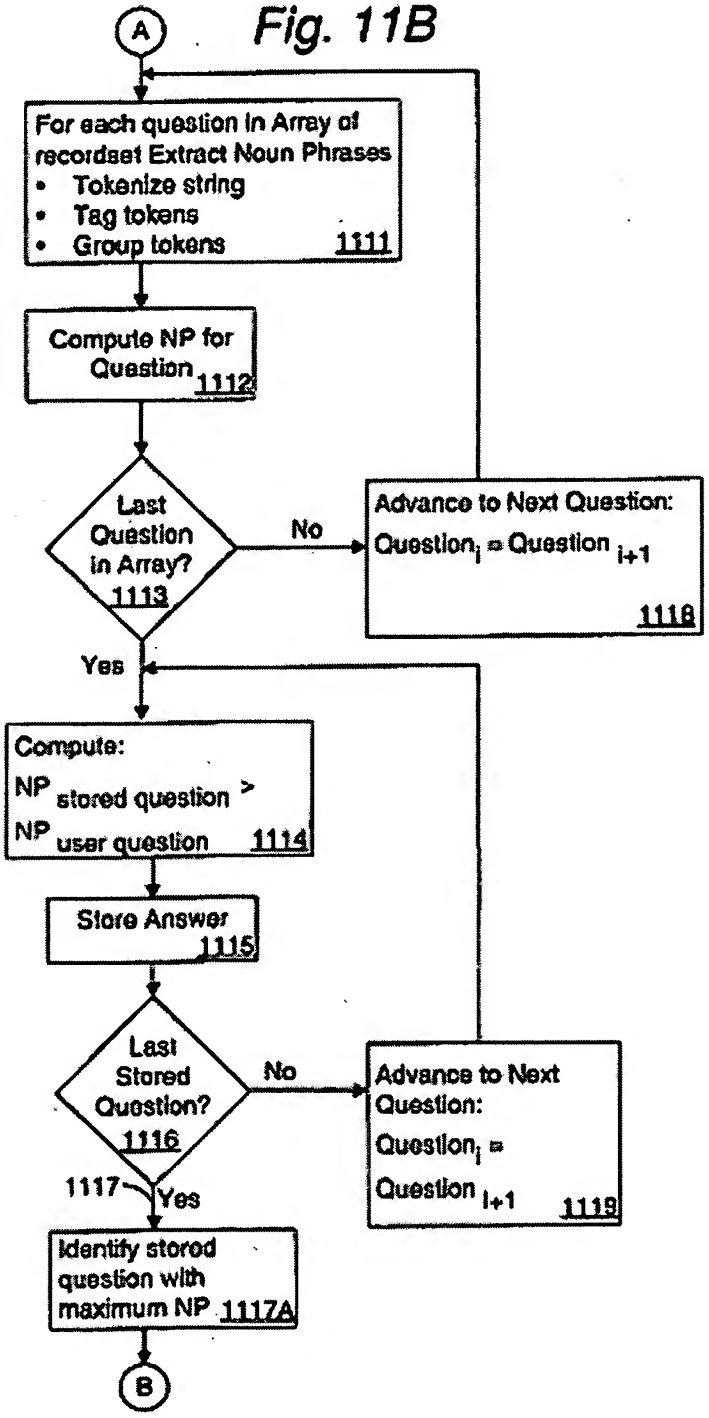
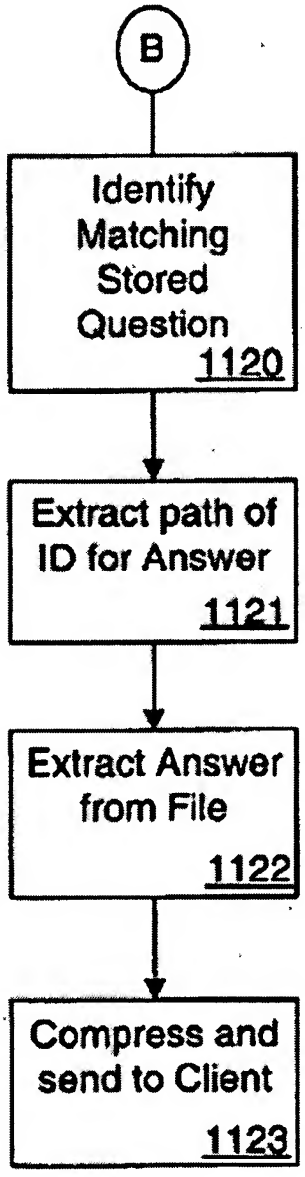

A
For each question in Array of recordset Extract Noun Phrases
• Tokenize string
• Tag tokens
• Group tokens
1111
Compute NP for Question
1112
Last Question in Array?
1113
No
Advance to Next Question:
Question$_i$ = Question$_{i+1}$
1118
Yes
Compute:
NP stored question >
NP user question
1114
Store Answer
1115
Last Stored Question?
1116
No
Advance to Next Question:
Question$_i$ =
Question$_{i+1}$
1119
1117
Yes
Identify stored question with maximum NP
1117A
B

Fig. 11C


B
Identify Matching Stored Question
1120
Extract path of ID for Answer
1121
Extract Answer from File
1122
Compress and send to Client
1123

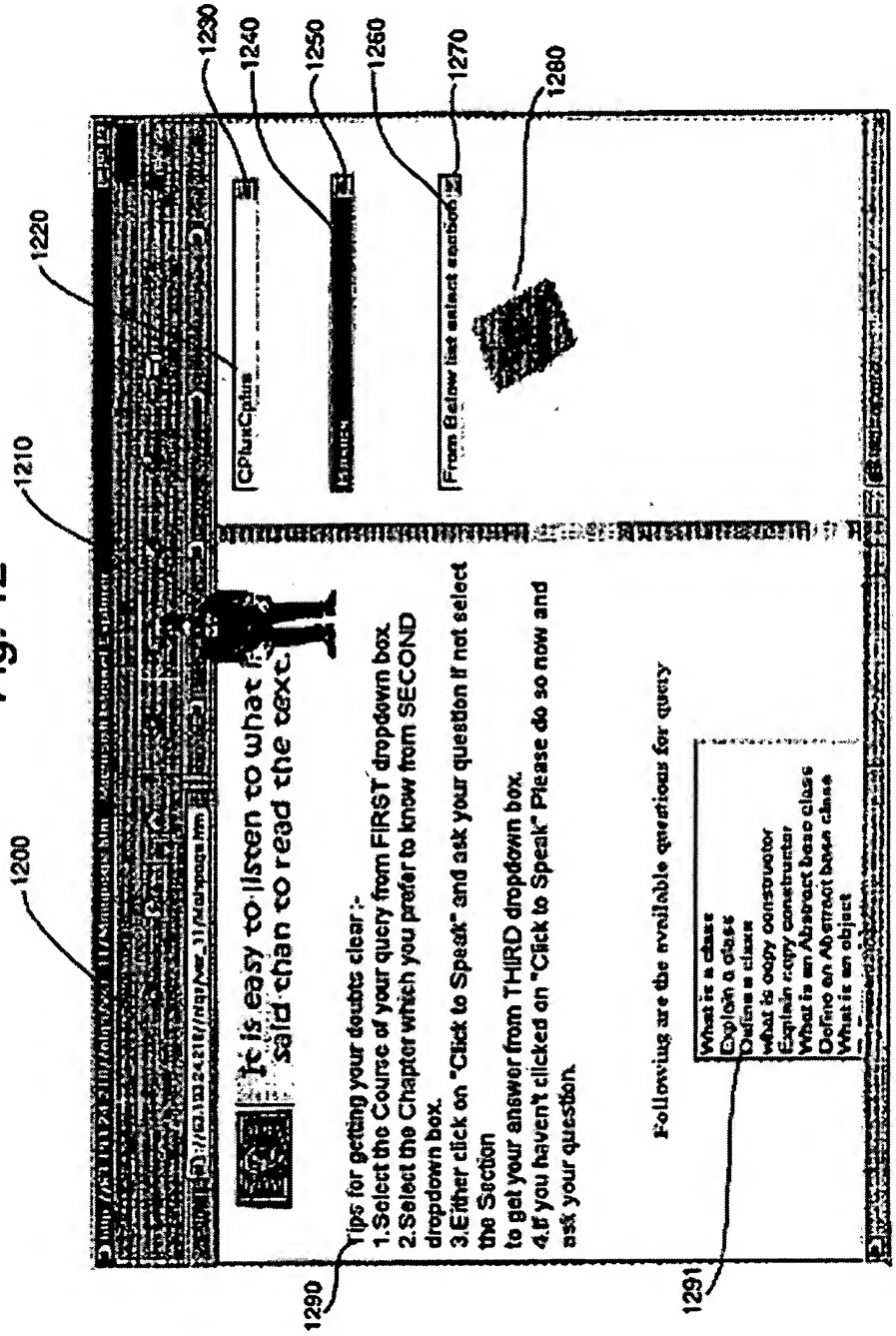

1200
1210
1220
1230
1240
1250
1260
1270
1280
1290
1291
CPlusCplus
From Below list select appropriate
It is easy to listen to what is said than to read the text.
Tips for getting your doubts clear :-
1.Select the Course of your query from FIRST dropdown box.
2.Select the Chapter which you prefer to know from SECOND dropdown box.
3.Either click on "Click to Speak" and ask your question if not select the Section
to get your answer from THIRD dropdown box.
4.If you haven't clicked on "Click to Speak" Please do so now and ask your question.
Following are the available questions for query
What is a class
Explain a class
Define a class
What is copy constructor
Explain copy constructor
What is an Abstract base class
Define an Abstract base class
What is an object

Fig. 12

Fig. 13

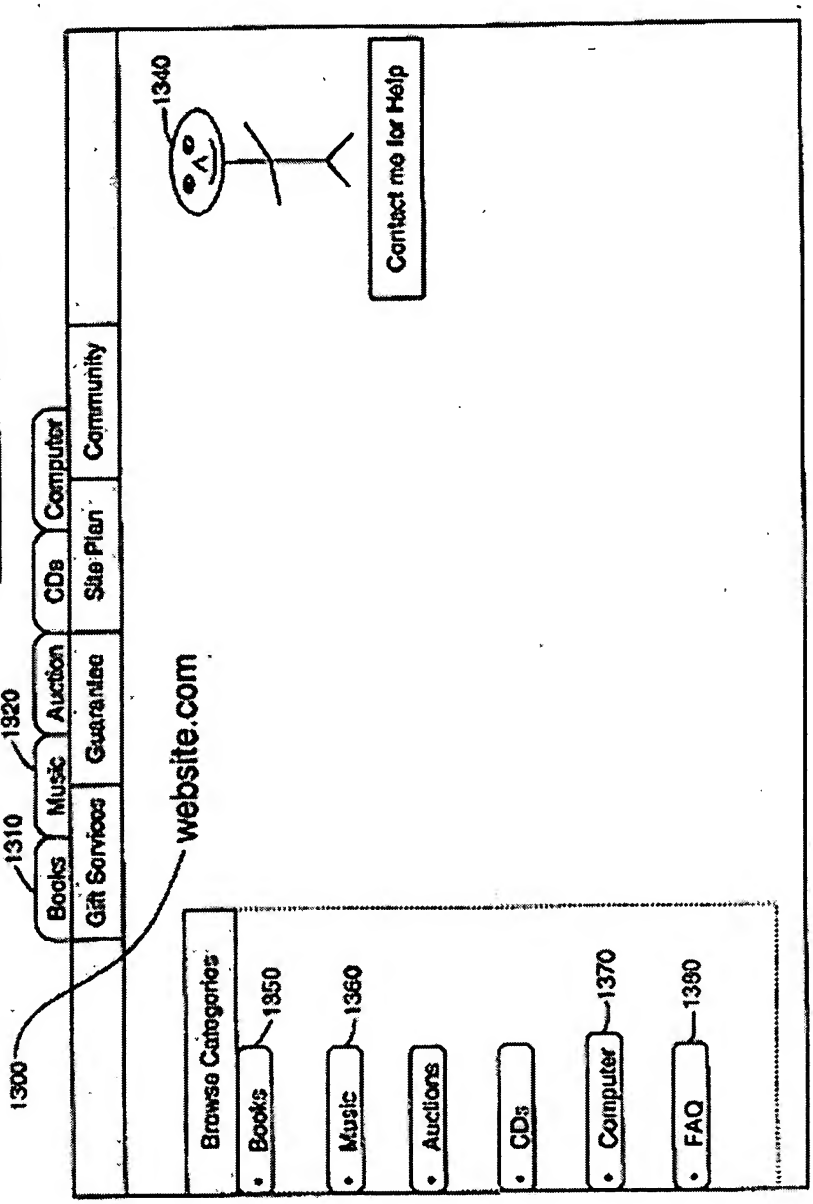

1300
website.com
1310
Books
Gift Services
1320
Music
Auction
Guarantee
Site Plan
CDs
Computer
Community
Account Info
Help
1330
1340
Contact me for Help
Browse Categories
Books
1350
Music
1360
Auctions
CDs
Computer
1370
FAQ
1380

Fig. 14

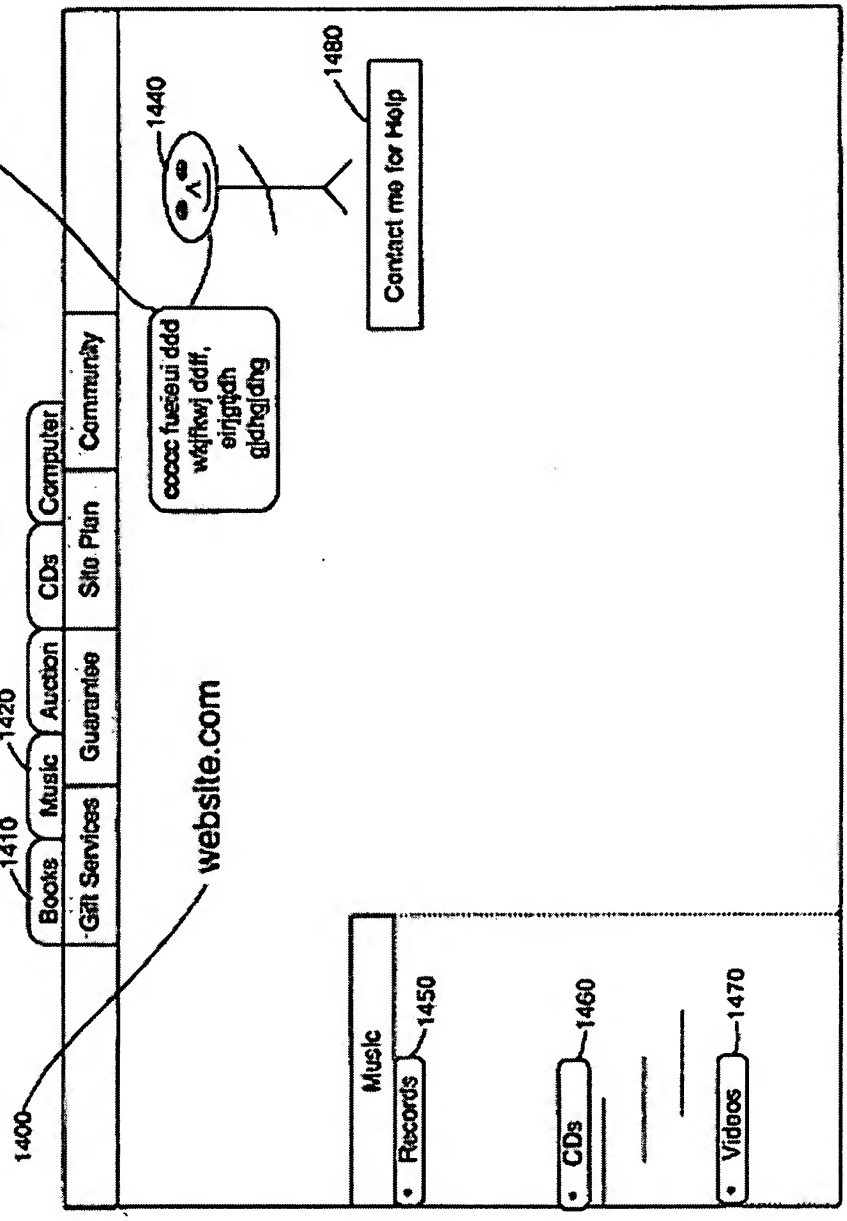

1400
website.com
1410
Books
Music
Gift Services
1420
Auction
Guarantee
CDs
Site Plan
Computer
Community
Account Info
Help
1430
1490
1440
1480
Contact me for Help
Music
Records
1450
CDs
1460
Videos
1470

Fig. 15

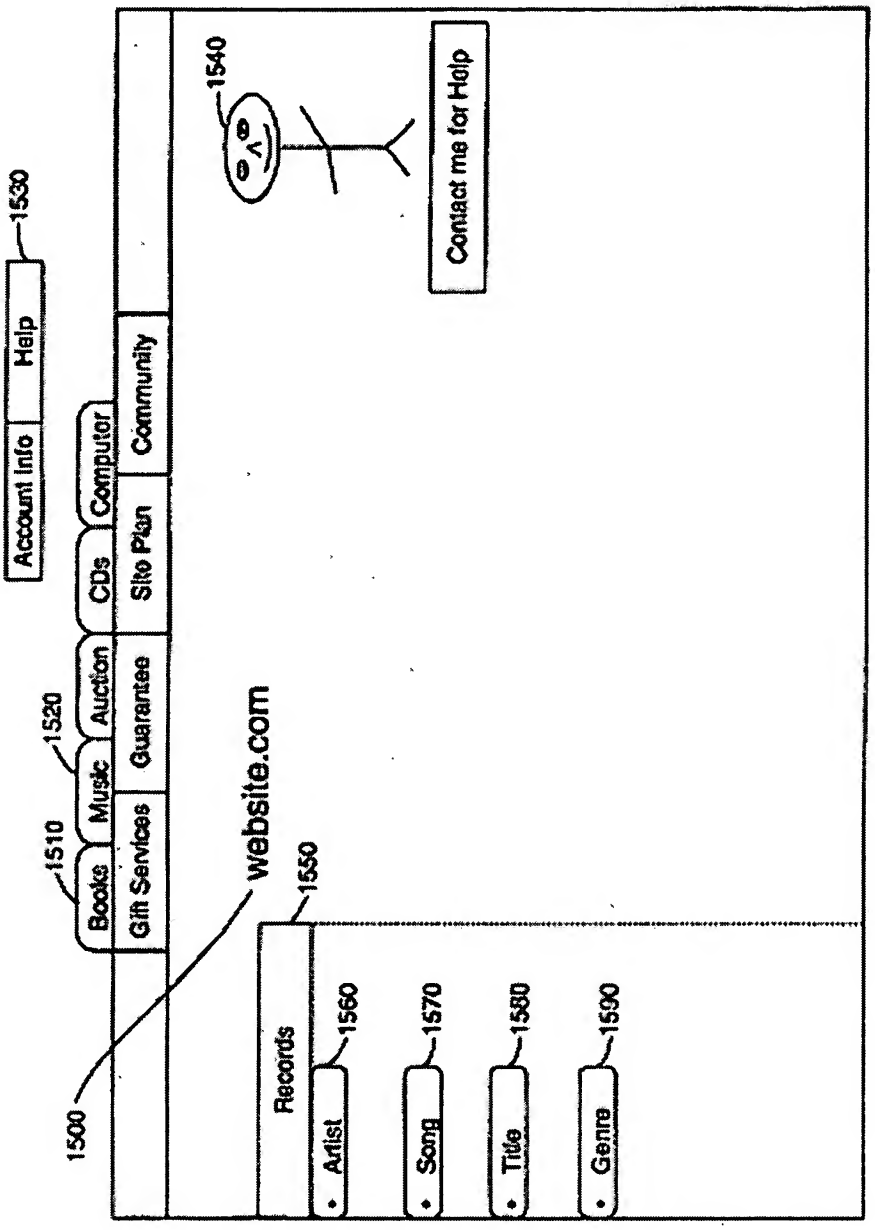

1500
website.com
1510
Books
Music
Auction
Computer
1520
Gift Services
Guarantee
Site Plan
Community
CDs
Account Info
Help
1530
1540
Contact me for Help
1550
Records
Artist
Song
Title
Genre
1560
1570
1580
1590

Fig. 16

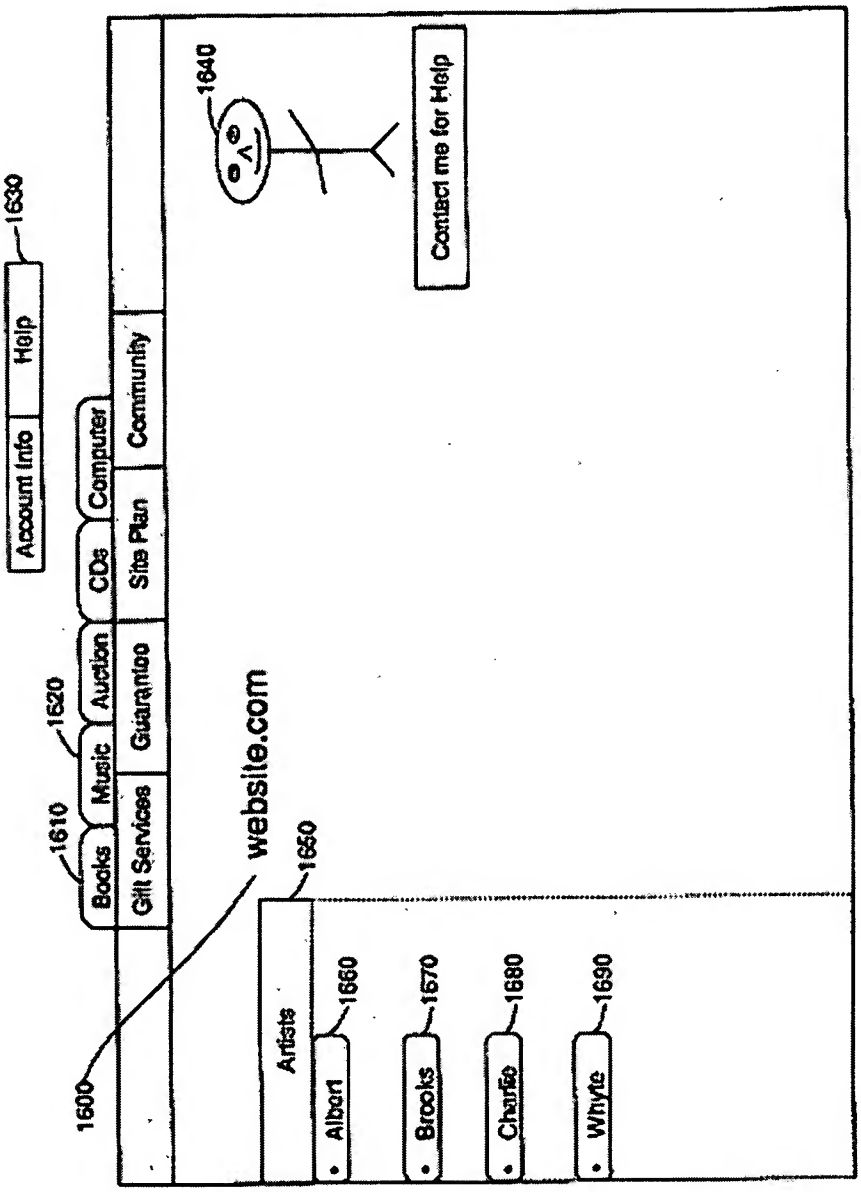
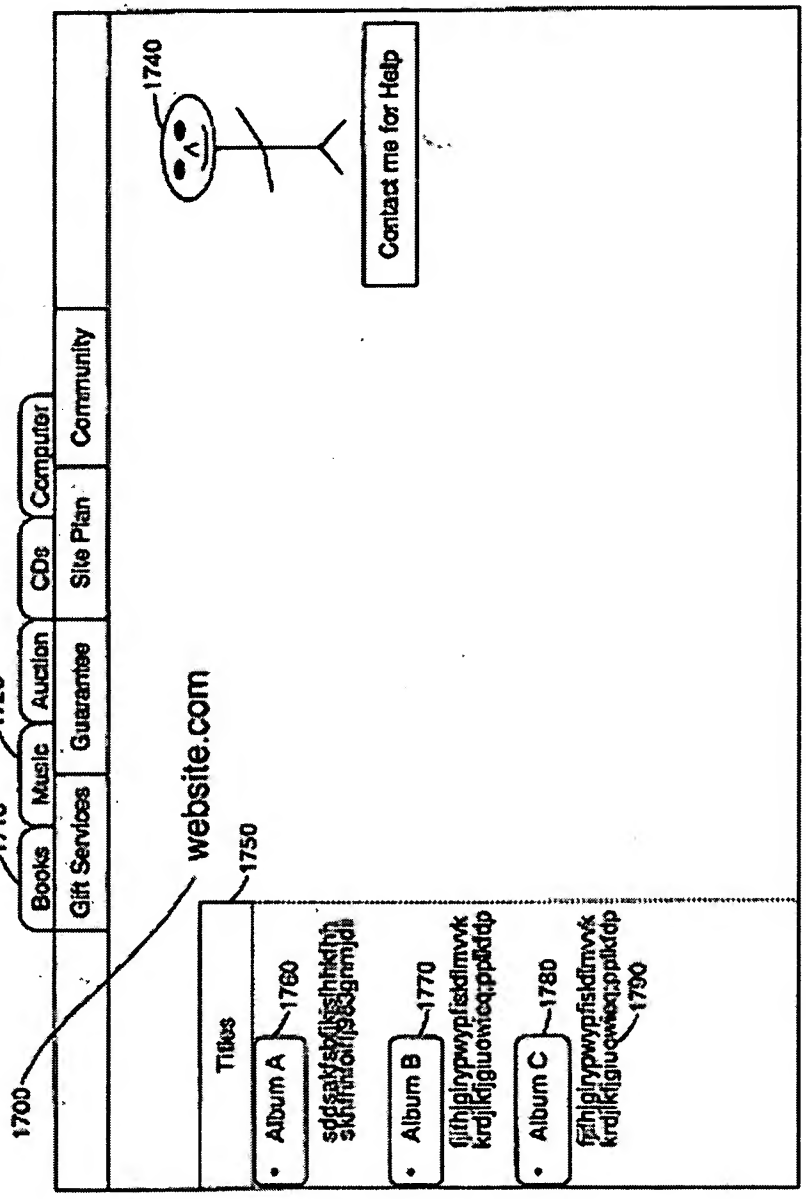

1600
website.com
1610
Books
Music
Gift Services
1620
Auction
Guarantee
CDs
Site Plan
Computer
Community
Account Info
Help
1630
1640
Contact me for Help
1650
Artists
1660
Albert
1670
Brooks
1680
Charlie
1690
Whyte

Fig. 17


1700
website.com
1710
Books
Gift Services
1720
Music
Guarantee
Auction
CDs
Site Plan
Computer
Community
Account Info
Help
1730
1740
Contact me for Help
1750
Titles
1760
Album A
1770
Album B
1780
Album C
1790

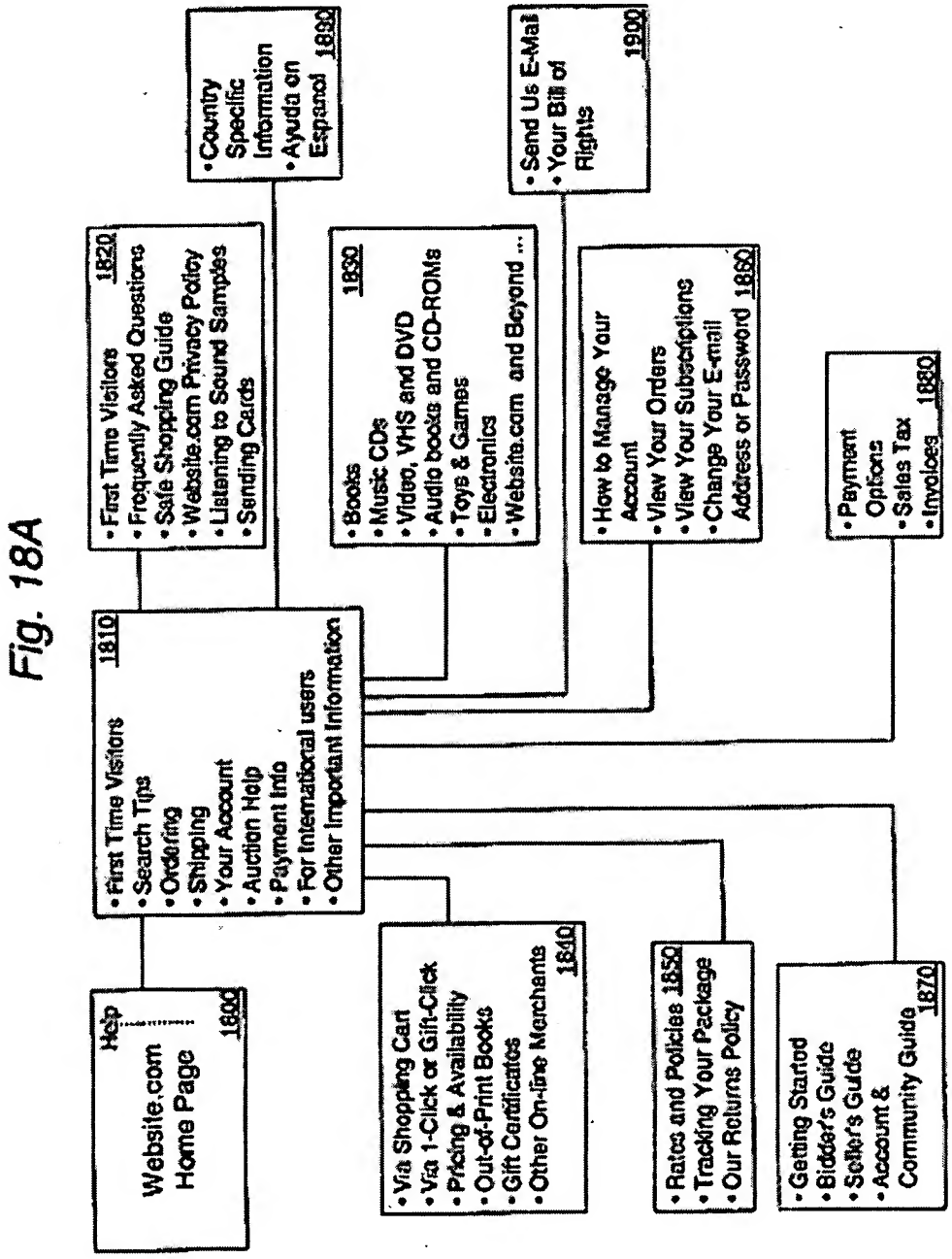

Help
Website.com Home Page
1800
First Time Visitors
Search Tips
Ordering
Shipping
Your Account
Auction Help
Payment Info
For International users
Other Important Information
1810
First Time Visitors
Frequently Asked Questions
Safe Shopping Guide
Website.com Privacy Policy
Listening to Sound Samples
Sending Cards
1820
Country Specific Information
Ayuda en Espanol
1830
Books
Music CDs
Video, VHS and DVD
Audio books and CD-ROMs
Toys & Games
Electronics
Website.com and Beyond ...
Via Shopping Cart
Via 1-Click or Gift-Click
Pricing & Availability
Out-of-Print Books
Gift Certificates
Other On-line Merchants
1840
Rates and Policies 1850
Tracking Your Package
Our Returns Policy
How to Manage Your Account
View Your Orders
View Your Subscriptions
Change Your E-mail Address or Password 1860
Getting Started
Bidder's Guide
Seller's Guide
Account & Community Guide
1870
Send Us E-Mail
Your Bill of Rights
1900
Payment Options
Sales Tax
Invoices 1880

Fig. 18A

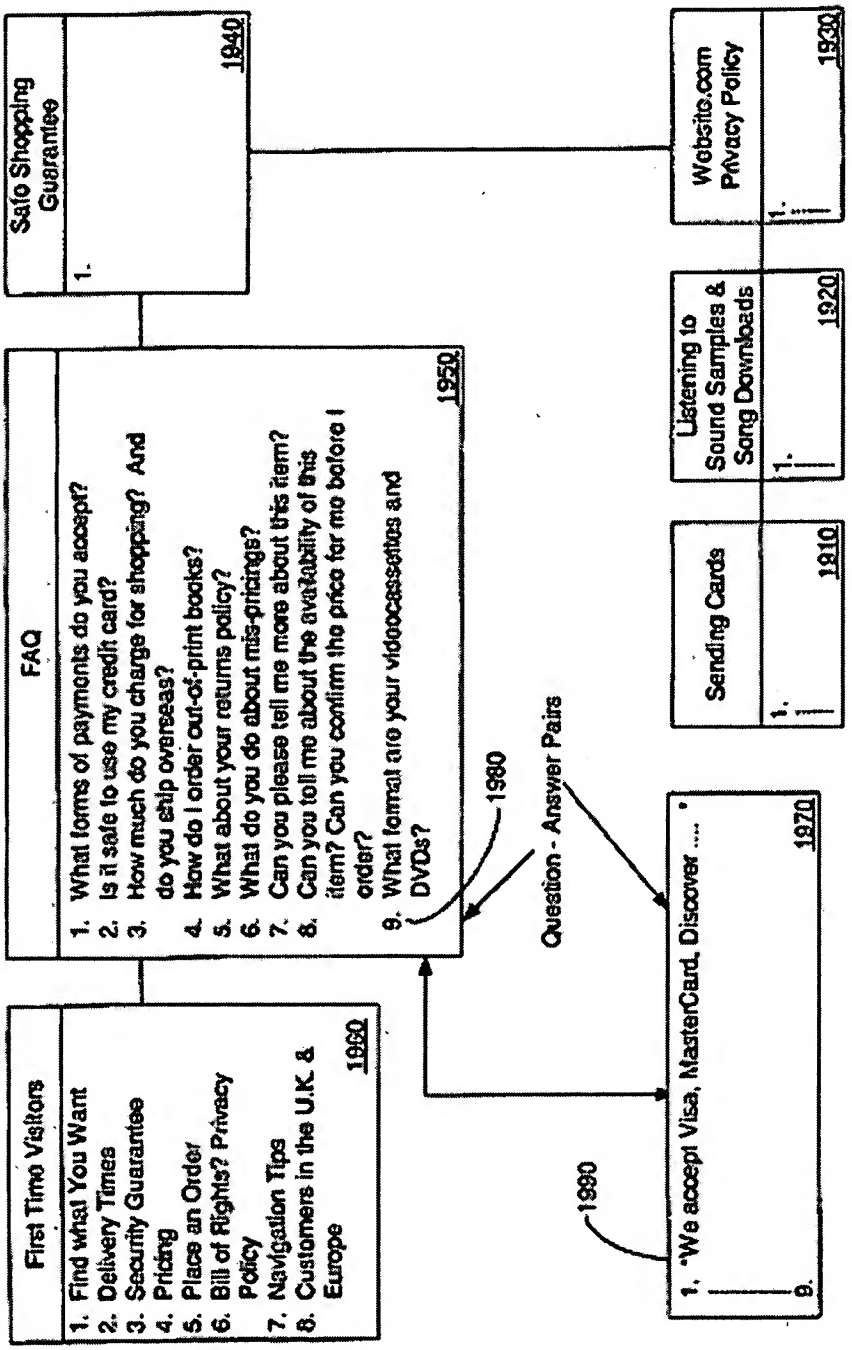

First Time Visitors
1. Find what You Want
2. Delivery Times
3. Security Guarantee
4. Pricing
5. Place an Order
6. Bill of Rights? Privacy Policy
7. Navigation Tips
8. Customers in the U.K. & Europe
1960
FAQ
1. What forms of payments do you accept?
2. Is it safe to use my credit card?
3. How much do you charge for shipping? And do you ship overseas?
4. How do I order out-of-print books?
5. What about your returns policy?
6. What do you do about mis-pricings?
7. Can you please tell me more about this item?
8. Can you tell me about the availability of this item? Can you confirm the price for me before I order?
9. What format are your videocassettes and DVDs?
1950
Safe Shopping Guarantee
1.
1940
Website.com Privacy Policy
1.
1930
Listening to Sound Samples & Song Downloads
1.
1920
Sending Cards
1.
1910
1980
Question - Answer Pairs
1990
1. "We accept Visa, MasterCard, Discover ...."
9.
1970

Fig. 18B

INTELLIGENT QUERY ENGINE FOR PROCESSING VOICE BASED QUERIES

RELATED APPLICATIONS

The present application is related to the following applications also filed contemporaneously herewith:

1) Ser. No. 09/439,145 entitled Distributed Real Time Speech Recognition System,

2) Ser. No. 09/439,173 entitled Speech Based Learning/Training System

3) Ser. No. 09/439,174 entitled Internet Server with Speech Support for Enhanced Interactivity

The above are incorporated by reference herein.

FIELD OF THE INVENTION

The invention relates to a system and an interactive method for rapidly and accurately processing speech queries. The system is particularly applicable to INTERNET based applications for e-learning, e-commerce, e-support, search engines and the like, so that a user can intelligently engage in a real-time question/answer session that emulates a human dialog experience.

BACKGROUND OF THE INVENTION

The INTERNET, and in particular, the World-Wide Web (WWW), is growing in popularity and usage for both commercial and recreational purposes, and this trend is expected to continue. This phenomenon is being driven, in part, by the increasing and widespread use of personal computer systems and the availability of low cost INTERNET access. The emergence of inexpensive INTERNET access devices and high speed access techniques such as ADSL, cable modems, satellite modems, and the like, are expected to further accelerate the mass usage of the WWW.

Accordingly, it is expected that the number of entities offering services, products, etc., over the WWW will increase dramatically over the coming years. Until now, however, the INTERNET "experience" for users has been limited mostly to non-voice based input/output devices, such as keyboards, intelligent electronic pads, mice, trackballs, printers, monitors, etc. This presents somewhat of a bottleneck for interacting over the WWW for a variety of reasons.

First, there is the issue of familiarity. Many kinds of applications lend themselves much more naturally and fluently to a voice-based environment. For instance, most people shopping for audio recordings are very comfortable with asking a live sales clerk in a record store for information on titles by a particular author, where they can be found in the store, etc. While it is often possible to browse and search on one's own to locate items of interest, it is usually easier and more efficient to get some form of human assistance first, and, with few exceptions, this request for assistance is presented in the form of a oral query. In addition, many persons cannot or will not, because of physical or psychological barriers, use any of the aforementioned conventional I/O devices. For example, many older persons cannot easily read the text presented on WWW pages, or understand the layout/hierarchy of menus, or manipulate a mouse to make finely coordinated movements to indicate their selections. Many others are intimidated by the look and complexity of computer systems, WWW pages, etc., and therefore do not attempt to use online services for this reason as well.

Thus, applications which can mimic normal human interactions are likely to be preferred by potential on-line shoppers and persons looking for information over the WWW. It is also expected that the use of voice-based systems will increase the universe of persons willing to engage in e-commerce, e-learning, etc. To date, however, there are very few systems, if any, which permit this type of interaction, and, if they do, it is very limited. For example, various commercial programs sold by IBM (VIAVOICE™) and Kurzweil (DRAGON™) permit some user control of the interface (opening, closing files) and searching (by using previously trained URLs) but they do not present a flexible solution that can be used by a number of users across multiple cultures and without time consuming voice training. Typical prior efforts to implement voice based functionality in an INTERNET context can be seen in U.S. Pat. No. 5,819,220 incorporated by reference herein.

Another issue presented by the lack of voice-based systems is efficiency. Many companies are now offering technical support over the INTERNET, and some even offer live operator assistance for such queries. While this is very advantageous (for the reasons mentioned above) it is also extremely costly and inefficient, because a real person must be employed to handle such queries. This presents a practical limit that results in long wait times for responses or high labor overheads. An example of this approach can be seen U.S. Pat. No. 5,802,526 also incorporated by reference herein. In general, a service presented over the WWW is far more desirable if it is "scalable," or, in other words, able to handle an increasing amount of user traffic with little if any perceived delay or troubles by a prospective user.

In a similar context, while remote learning has become an increasingly popular option for many students, it is practically impossible for an instructor to be able to field questions from more than one person at a time. Even then, such interaction usually takes place for only a limited period of time because of other instructor time constraints. To date, however, there is no practical way for students to continue a human-like question and answer type dialog after the learning session is over, or without the presence of the instructor to personally address such queries.

Conversely, another aspect of emulating a human-like dialog involves the use of oral feedback. In other words, many persons prefer to receive answers and information in audible form. While a form of this functionality is used by some websites to communicate information to visitors, it is not performed in a real-time, interactive question-answer dialog fashion so its effectiveness and usefulness is limited.

Yet another area that could benefit from speech-based interaction involves so-called "search" engines used by INTERNET users to locate information of interest at web sites, such as the those available at YAHOO®.com, METACRAWLER®.com, EXCITE®.com, etc. These tools permit the user to form a search query using either combinations of keywords or metacategories to search through a web page database containing text indices associated with one or more distinct web pages. After processing the user's request, therefore, the search engine returns a number of hits which correspond, generally, to URL pointers and text excerpts from the web pages that represent the closest match made by such search engine for the particular user query based on the search processing logic used by search engine. The structure and operation of such prior art search engines, including the mechanism by which they build the web page database, and parse the search query, are well known in the art. To date, applicant is unaware of any such search engine that can easily and reliably search and retrieve information based on speech input from a user.

There are a number of reasons why the above environments (e-commerce, e-support, remote learning, INTER-

NET searching, etc.) do not utilize speech-based interfaces, despite the many benefits that would otherwise flow from such capability. First, there is obviously a requirement that the output of the speech recognizer be as accurate as possible. One of the more reliable approaches to speech recognition used at this time is based on the Hidden Markov Model (HMM)—a model used to mathematically describe any time series. A conventional usage of this technique is disclosed, for example, in U.S. Pat. No. 4,587,670 incorporated by reference herein. Because speech is considered to have an underlying sequence of one or more symbols, the HMM models corresponding to each symbol are trained on vectors from the speech waveforms. The Hidden Markov Model is a finite set of states, each of which is associated with a (generally multi-dimensional) probability distribution. Transitions among the states are governed by a set of probabilities called transition probabilities. In a particular state an outcome or observation can be generated, according to the associated probability distribution. This finite state machine changes state once every time unit, and each time t such that a state j is entered, a spectral parameter vector O_t is generated with probability density $B_j(O_t)$. It is only the outcome, not the state visible to an external observer and therefore states are "hidden" to the outside; hence the name Hidden Markov Model. The basic theory of HMMs was published in a series of classic papers by Baum and his colleagues in the late 1960's and early 1970's. HMMs were first used in speech applications by Baker at Carnegie Mellon, by Jelinik and colleagues at IBM in the late 1970's and by Steve Young and colleagues at Cambridge University, UK in the 1990's. Some typical papers and texts are as follows:

1. L. E. Baum, T. Petrie, "Statistical inference for probabilistic functions for finite state Markov chains", Ann. Math. Stat., 37: 1554–1563, 1966
2. L. E. Baum, "An inequality and associated maximation technique in statistical estimation for probabilistic functions of Markov processes", Inequalities 3: 1–8, 1972
3. J. H. Baker, "The dragon system—An Overview", IEEE Trans. on ASSP Proc., ASSP-23(1): 24–29, February 1975
4. F. Jeninek et al, "Continuous Speech Recognition: Statistical methods" in Handbook of Statistics, II, P. R. Krishnaiah, Ed. Amsterdam, The Netherlands, North-Holland, 1982
5. L. R. Bahl, F. Jeninek, R. L. Mercer, "A maximum likelihood approach to continuous speech recognition", IEEE Trans. Pattern Anal. Mach. Intell., PAMI-5: 179–190, 1983
6. J. D. Ferguson, "Hidden Markov Analysis: An Introduction", in Hidden Markov Models for Speech, Institute of Defense Analyses, Princeton, N.J. 1980
7. H. R. Rabiner and B. H. Juang, "Fundamentals of Speech Recognition", Prentice Hall, 1993
8. H. R. Rabiner, "Digital Processing of Speech Signals", Prentice Hall, 1978

More recently research has progressed in extending HMM and combining HMMs with neural networks to speech recognition applications at various laboratories. The following is a representative paper:

9. Nelson Morgan, Herve Bourlard, Steve Renals, Michael Cohen and Horacio Franco (1993), Hybrid Neural Network/Hidden Markov Model Systems for Continuous Speech Recognition. *Journal of Pattern Recognition and Artificial Intelligence*, Vol.7, No. 4 pp. 899–916.

Also in I. Guyon and P. Wang editors, *Advances in Pattern Recognition Systems using Neural Networks*, Vol. 7 of a Series in Machine Perception and Artificial Intelligence. World Scientific, February 1994.

All of the above are hereby incorporated by reference. While the HMM-based speech recognition yields very good results, contemporary variations of this technique cannot guarantee a word accuracy requirement of 100% exactly and consistently, as will be required for WWW applications for all possible all user and environment conditions. Thus, although speech recognition technology has been available for several years, and has improved significantly, the technical requirements have placed severe restrictions on the specifications for the speech recognition accuracy that is required for an application that combines speech recognition and natural language processing to work satisfactorily.

In contrast to word recognition, Natural language processing (NLP) is concerned with the parsing, understanding and indexing of transcribed utterances and larger linguistic units. Because spontaneous speech contains many surface phenomena such as disfluencies, - hesitations, repairs and restarts, discourse markers such as 'well' and other elements which cannot be handled by the typical speech recognizer, it is the problem and the source of the large gap that separates speech recognition and natural language processing technologies. Except for silence between utterances, another problem is the absence of any marked punctuation available for segmenting the speech input into meaningful units such as utterances. For optimal NLP performance, these types of phenomena should be annotated at its input. However, most continuous speech recognition systems produce only a raw sequence of words. Examples of conventional systems using NLP are shown in U.S. Pat. Nos. 4,991,094, 5,068,789, 5,146,405 and 5,680,628, all of which are incorporated by reference herein.

Second, most of the very reliable voice recognition systems are speaker-dependent, requiring that the interface be "trained" with the user's voice, which takes a lot of time, and is thus very undesirable from the perspective of a WWW environment, where a user may interact only a few times with a particular website. Furthermore, speaker-dependent systems usually require a large user dictionary (one for each unique user) which reduces the speed of recognition. This makes it much harder to implement a real-time dialog interface with satisfactory response capability (i.e., something that mirrors normal conversation—on the order of 3–5 seconds is probably ideal). At present, the typical shrink-wrapped speech recognition application software include offerings from IBM (VIAVOICE™) and Dragon Systems (DRAGON™). While most of these applications are adequate for dictation and other transcribing applications, they are woefully inadequate for applications such as NLIS where the word error rate must be close to 0%. In addition these offerings require long training times and are typically are non client-server configurations. Other types of trained systems are discussed in U.S. Pat. No. 5,231,670 assigned to Kurzweil, and which is also incorporated by reference herein.

Another significant problem faced in a distributed voice-based system is a lack of uniformity/control in the speech recognition process. In a typical stand-alone implementation of a speech recognition system, the entire SR engine runs on a single client. A well-known system of this type is depicted in U.S. Pat. No. 4,991,217 incorporated by reference herein. These clients can take numerous forms (desktop PC, laptop PC, PDA, etc.) having varying speech signal processing and communications capability. Thus, from the server side

perspective, it is not easy to ensure uniform treatment of all users accessing a voice-enabled web page, since such users may have significantly disparate word recognition and error rate performances. While a prior art reference to Gould et al.—U.S. Pat. No. 5,915,236—discusses generally the notion of tailoring a recognition process to a set of available computational resources, it does not address or attempt to solve the issue of how to optimize resources in a distributed environment such as a client-server model. Again, to enable such voice-based technologies on a wide-spread scale it is far more preferable to have a system that harmonizes and accounts for discrepancies in individual systems so that even the thinnest client is supportable, and so that all users are able to interact in a satisfactory manner with the remote server running the e-commerce, e-support and/or remote learning application.

Two references that refer to a distributed approach for speech recognition include U.S. Pat. Nos. 5,956,683 and 5,960,399 incorporated by reference herein. In the first of these, U.S. Pat. No. 5,956,683—Distributed Voice Recognition System (assigned to Qualcomm) an implementation of a distributed voice recognition system between a telephony-based handset and a remote station is described. In this implementation, all of the word recognition operations seem to take place at the handset. This is done since the patent describes the benefits that result from locating of the system for acoustic feature extraction at the portable or cellular phone in order to limit degradation of the acoustic features due to quantization distortion resulting from the narrow bandwidth telephony channel. This reference therefore does not address the issue of how to ensure adequate performance for a very thin client platform. Moreover, it is difficult to determine, how, if at all, the system can perform real-time word recognition, and there is no meaningful description of how to integrate the system with a natural language processor.

The second of these references—U.S. Pat. No. 5,960,399—Client/Server Speech Processor/Recognizer (assigned to GTE) describes the implementation of a HMM-based distributed speech recognition system. This reference is not instructive in many respects, however, including how to optimize acoustic feature extraction for a variety of client platforms, such as by performing a partial word recognition process where appropriate. Most importantly, there is only a description of a primitive server-based recognizer that only recognizes the user's speech and simply returns certain keywords such as the user's name and travel destination to fill out a dedicated form on the user's machine. Also, the streaming of the acoustic parameters does not appear to be implemented in real-time as it can only take place after silence is detected. Finally, while the reference mentions the possible use of natural language processing (column 9); there is no explanation of how such function might be implemented in a real-time fashion to provide an interactive feel for the user.

SUMMARY OF THE INVENTION

An object of the present invention, therefore, is to provide an improved system and method for overcoming the limitations of the prior art noted above;

A primary object of the present invention is to provide a word and phrase recognition system that is flexibly and optimally distributed across a client/platform computing architecture, so that improved accuracy, speed and uniformity can be achieved for a wide group of users;

A further object of the present invention is to provide a speech recognition system that efficiently integrates a distributed word recognition system with a natural language processing system, so that both individual words and entire speech utterances can be quickly and accurately recognized in any number of possible languages;

A related object of the present invention is to provide an efficient query response system so that an extremely accurate, real-time set of appropriate answers can be given in response to speech-based queries;

Yet another object of the present invention is to provide an interactive, real-time instructional/learning system that is distributed across a client/server architecture, and permits a real-time question/answer session with an interactive character;

A related object of the present invention is to implement such interactive character with an articulated response capability so that the user experiences a human-like interaction;

Still a further object of the present invention is to provide an INTERNET website with speech processing capability so that voice based data and commands can be used to interact with such site, thus enabling voice-based e-commerce and e-support services to be easily scaleable;

Another object is to implement a distributed speech recognition system that utilizes environmental variables as part of the recognition process to improve accuracy and speed;

A further object is to provide a scaleable query/response database system, to support any number of query topics and users as needed for a particular application and instantaneous demand;

Yet another object of the present invention is to provide a query recognition system that employs a two-step approach, including a relatively rapid first step to narrow down the list of potential responses to a smaller candidate set, and a second more computationally intensive second step to identify the best choice to be returned in response to the query from the candidate set;

A further object of the present invention is to provide a natural language processing system that facilitates query recognition by extracting lexical components of speech utterances, which components can be used for rapidly identifying a candidate set of potential responses appropriate for such speech utterances;

Another related object of the present invention is to provide a natural language processing system that facilitates query recognition by comparing lexical components of speech utterances with a candidate set of potential response to provide an extremely accurate best response to such query.

One general aspect of the present invention, therefore, relates to a natural language query system (NLQS) that offers a fully interactive method for answering user's questions over a distributed network such as the INTERNET or a local intranet. This interactive system when implemented over the worldwide web (WWW) services of the INTERNET functions so that a client or user can ask a question in a natural language such as English, French, German or Spanish and receive the appropriate answer at his or her personal computer also in his or her native natural language.

The system is distributed and consists of a set of integrated software modules at the client's machine and another set of integrated software programs resident on a server or set of servers. The client-side software program is comprised of a speech recognition program, an agent and its control program, and a communication program. The server-side program is comprised of a communication program, a data-

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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

PHOENIX SOLUTIONS, INC.,

Plaintiff,

vs.

THE DIRECTV GROUP, INC.,

Defendant.

CASE NO. CV 08-984 MRP (SSx)

ANSWER AND AFFIRMATIVE DEFENSES TO AMENDED COMPLAINT FOR DAMAGES AND INJUNCTIVE RELIEF FOR INFRINGEMENT OF U.S. PATENT NOS. 6,615,172, 7,139,714, 7,050,977, AND 7,225,125

JURY TRIAL DEMANDED

Hon. Mariana R. Pfaelzer

The DIRECTV Group, Inc. ("DIRECTV" or "Defendant"), defendant in the above-entitled and numbered civil action states for its Answer and Affirmative Defenses to the Amended Complaint of Plaintiff Phoenix Solutions, Inc. ("Phoenix" or "Plaintiff") as follows:

1. DIRECTV admits that the Amended Complaint purports to allege a claim for infringement arising under the patent laws of the United States, 35 U.S.C. § 271 *et seq.*

I. THE PARTIES

2. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 2 and on that basis denies them.

3. DIRECTV admits the allegations of Paragraph 3.

II. FACTUAL BACKGROUND

4. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 4 and on that basis denies them.

5. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 5 and on that basis denies them.

6. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 6 and on that basis denies them.

7. DIRECTV admits that operating companies of DIRECTV provide digital television entertainment services. DIRECTV avers that it is a holding company and denies that it has any involvement in the activities accused of infringement. DIRECTV admits that there are toll-free telephone numbers by which customers, prospective customers, and technicians for DIRECTV subsidiary services can access customer service functionality that partly uses natural language

interactive voice response ("IVR") technology. This customer service functionality can include movie and/or event ordering and installer activation functionality. DIRECTV denies that any website of DIRECTV or its subsidiaries has natural language capabilities. Except as so specifically admitted, denied, or averred, DIRECTV denies the allegations of Paragraph 7.

8. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 8 and on that basis denies them.

9. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 9 and on that basis denies them.

10. DIRECTV admits that there is no IVR hardware or software located at the facilities of DIRECTV or its subsidiaries. DIRECTV admits that its subsidiary has a contract with an IVR vendor, which provides IVR services. DIRECTV denies that it or its subsidiaries provide specifications and data to a third party to configure and customize IVR functionality for DIRECTV's or its subsidiaries' use, and customers' needs. DIRECTV denies that it or its subsidiaries adapt telephony hardware and computer server hardware to respond to spoken questions from callers concerning DIRECTV's business. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 10 and on that basis denies them.

11. DIRECTV denies that it or its subsidiaries configure computing systems to customize what speech processing operations will take place on hardware systems to maximize certain characteristics of the system, and to regulate how speech data from the callers is transferred between such systems. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 11 and on that basis denies them.

12. DIRECTV admits there are toll-free telephone numbers by which customers, prospective customers, and technicians for DIRECTV subsidiary services can access customer service functionality that partly employs natural language IVR technology. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 12 and on that basis denies them.

13. DIRECTV denies that it or its subsidiaries control precisely what specific words the IVR technology will understand as part of its vocabulary. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 13 and on that basis denies them.

14. DIRECTV denies that it or its subsidiaries control precisely what interpretation the IVR system should give to various words spoken by its customers/installers. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 14 and on that basis denies them.

15. DIRECTV denies that it or its subsidiaries alone control precisely what responses and actions a virtual agent takes, and have configured certain aspects of a client computing system and/or server computing system to provide such desired responses or actions. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 15 and on that basis denies them.

16. DIRECTV denies that it or its subsidiaries configured and controlled other aspects of a virtual agent's overall behavior, including among other things, the gender, apparent age, speech rate, prosody, style and rate of response. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 16 and on that basis denies them.

17. DIRECTV denies that it or its subsidiaries designed, customized and selected the personality exhibited by a virtual agent. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 17 and on that basis denies them.

18. DIRECTV denies that it or its subsidiaries collected and studied data from calls made to a customer support line to provide information such as the grammar used, specific questions, the interpretation of questions, and answers to be given to customers by an IVR system. DIRECTV denies that it or its subsidiaries used call center data that is unique to the business of DIRECTV or its subsidiaries to train an IVR system. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 18 and on that basis denies them.

19. DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 19 and on that basis denies them.

20. DIRECTV denies that it or its subsidiaries have caused third party components to be combined, adapted and configured in accordance with specific performance, content requirements and scenarios of customer/installer support operations. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 20 and on that basis denies them.

21. DIRECTV denies the allegations of Paragraph 21.

22. DIRECTV admits that it received a letter from Plaintiff dated February 20, 2007, which states: "After reviewing your agent, we believe that such system, and its operation, is very likely covered by one or more claims of the Phoenix portfolio in this area." DIRECTV further admits that the letter included an offer to license. Except as so specifically admitted, denied, or averred, DIRECTV denies

the remaining allegations of Paragraph 22, and avers that Plaintiff rejected DIRECTV's good-faith effort to meet with Plaintiff together with the vendors of the technology at issue.

III. JURISDICTION AND VENUE

23. DIRECTV admits that jurisdiction of this Court may be founded upon 28 U.S.C. § 1338(a).

24. DIRECTV admits that it is subject to this Court's personal jurisdiction.

25. DIRECTV admits that venue is proper in this judicial district. DIRECTV denies that it has committed acts of infringement within this judicial district as required by 28 U.S.C. § 1400. DIRECTV avers that because the accused technology is supplied by vendors that are located outside this judicial district, this judicial district may not be a convenient forum.

IV. FIRST COUNT FOR ALLEGED INFRINGEMENT OF UNITED STATES PATENT NO. 6,615,172

26. DIRECTV hereby incorporates, as if fully set forth herein, the answers of Paragraph 1 through 25 of this Answer and Affirmative Defenses.

27. DIRECTV admits that U.S. Patent No. 6,615,172 (the "'172 patent") is entitled "Intelligent Query Engine For Processing Voice Based Queries." DIRECTV further admits that the '172 patent purports to identify Plaintiff as the assignee. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the remaining allegations of Paragraph 27 and on that basis denies them.

28. DIRECTV denies the allegations of Paragraph 28.

29. DIRECTV denies the allegations of Paragraph 29.

30. DIRECTV denies the allegations of Paragraph 30.

V. SECOND COUNT FOR ALLEGED INFRINGEMENT OF UNITED STATES PATENT NO. 7,139,714

31. DIRECTV hereby incorporates, as if fully set forth herein, the answers of Paragraph 1 through 25 of this Answer and Affirmative Defenses.

32. DIRECTV admits that U.S. Patent No. 7,139,714 (" '714 patent") is entitled "Adjustable Resource Based Speech Recognition System." DIRECTV further admits that the '714 patent purports to identify Plaintiff as the assignee. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 32 and on that basis denies them.

33. DIRECTV denies the allegations of Paragraph 33.

34. DIRECTV denies the allegations of Paragraph 34.

35. DIRECTV denies the allegations of Paragraph 35.

VI. THIRD COUNT FOR ALLEGED INFRINGEMENT OF UNITED STATES PATENT NO. 7,050,977

36. DIRECTV hereby incorporates, as if fully set forth herein, the answers of Paragraph 1 through 25 of this Answer and Affirmative Defenses.

37. DIRECTV admits that U.S. Patent No. 7,050,977 (the "'977 patent") is entitled "Speech-Enabled Server For Internet Website and Method." DIRECTV further admits that the '977 patent purports to identify Plaintiff as the assignee. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 37 and on that basis denies them.

38. DIRECTV denies the allegations of Paragraph 38.

39. DIRECTV denies the allegations of Paragraph 39.

40. DIRECTV denies the allegations of Paragraph 40.

VII. FOURTH COUNT FOR ALLEGED INFRINGEMENT OF UNITED STATES PATENT NO. 7,225,125

41. DIRECTV hereby incorporates, as if fully set forth herein, the answers of Paragraph 1 through 25 of this Answer and Affirmative Defenses.

42. DIRECTV admits that U.S. Patent No. 7,225,125 (the "'125 patent") is entitled "Speech Recognition System Trained With Regional Speech Characteristics." DIRECTV further admits that the '125 patent purports to identify Plaintiff as the assignee. Except as so specifically admitted, denied, or averred, DIRECTV lacks knowledge or information sufficient to form a belief about the truth or falsity of the allegations of Paragraph 42 and on that basis denies them.

43. DIRECTV denies the allegations of Paragraph 43.

44. DIRECTV denies the allegations of Paragraph 44.

45. DIRECTV denies the allegations of Paragraph 45.

46. Paragraph 46 alleges a demand for jury trial as to which no response is necessary.

AFFIRMATIVE DEFENSES

First Affirmative Defense

47. Defendants have not infringed, contributed to the infringement of, induced the infringement of, or otherwise directly or indirectly infringed any claim of the '172, '714, '977, or '125 patents.

Second Affirmative Defense

48. The claims of '172, '714, '977, and '125 patents are invalid for failure to satisfy one or more of the conditions of patentability set forth in Title 35 of the United States Code, including, but not limited to, 35 U.S.C. §§ 101, 102, 103, and 112.

Third Affirmative Defense

49. Plaintiff is estopped from asserting its infringement claims under the doctrines of prosecution disclaimer and/or prosecution history estoppel.

Fourth Affirmative Defense

50. On the basis of the prosecution history of patents asserted by Plaintiff and related patents, Plaintiff's claims against DIRECTV are barred, in whole or in part, by the doctrine of prosecution laches.

Fifth Affirmative Defense

51. Plaintiff is barred from recovery for alleged infringement of the '172, '714, '977, and '125 patents under the doctrine of laches.

Sixth Affirmative Defense

52. Plaintiff is barred or limited from recovery in whole or in part by the failure to mark, by itself or by one or more parties licensed to practice the '172, '714, '977, or '125 patents as required by 35 U.S.C. § 287.

Seventh Affirmative Defense

53. Because the accused technology is supplied by vendors that are located outside this judicial district, this judicial district may not be a convenient forum.

Eighth Affirmative Defense

54. On information and belief, Phoenix's claims for infringement of the '977 patent are barred in whole or in part by its failure to comply with the duty of candor before the USPTO. Phoenix misrepresented or omitted material information in prosecuting the '977 patent. The materiality of the information that was omitted is confirmed by the fact that, as explained further below, in each instance the reference in question was cited to Phoenix by a patent examiner overseeing the prosecution of a patent application seeking to claim related subject matter, and the reference was cited as a ground for rejecting the claims of that pending application. That demonstrates that a reasonable examiner would have likely considered the withheld information relevant in assessing the patentability of the claims here. Further, on information and belief, Phoenix withheld the information with the intent to deceive the USPTO. Phoenix's intent to deceive the USPTO can be inferred from the fact that it repeatedly failed to cite material prior art of which it was made aware

during the course of prosecuting related applications. Illustrative examples of such failures to disclose material prior art of which DIRECTV is currently aware are discussed below. As a result of at least these omissions, the '977 patent is unenforceable due to inequitable conduct.

55. Persons with a duty of candor to the USPTO with respect to the '977 patent included the prosecuting attorney, J. Nicholas Gross, the alleged inventors, Ian M. Bennett, Bandi Ramesh Babu, Andra Pradesh, Kishor Morkhandikar, Pallaki Gururaj, and other persons substantively involved in the prosecution of the '977 patent.

56. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,615,296 to Stanford. On information and belief, persons with a duty of candor became aware of the Stanford patent no later than May of 2002, when the Examiner in the prosecution of U.S. Patent No. 6,665,640 (the "'640 patent") mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Stanford patent.

57. After May of 2002, Phoenix submitted no less than five Information Disclosure Statements. Not one disclosed the Stanford patent. Phoenix also twice amended its claims, but did not make any mention of the Stanford patent when doing so, despite the fact that Phoenix had attempted at length to distinguish the Stanford patent in the '640 patent prosecution.

58. The '977 patent reflects on its face that the Stanford patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

59. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,737,485 to Flanagan. On information and belief, persons with a duty of candor became aware of the Flanagan patent no later

than September of 2001, when the Examiner in the prosecution of U.S. Patent No. 6,633,846 (the "'846 patent") mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Flanagan patent.

60. After September of 2001, Phoenix submitted a half-dozen Information Disclosure Statements. Not one disclosed the Flanagan patent. Phoenix also twice amended its claims, but did not make any mention of the Flanagan patent when doing so.

61. The '977 patent reflects on its face that the Flanagan patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

62. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,265,014 to Haddock. On information and belief, persons with a duty of candor became aware of the Haddock patent no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Haddock patent.

63. After September 2001, Phoenix submitted a half-dozen Information Disclosure Statements. Not one disclosed the Haddock patent. Phoenix also twice amended its claims, but did not make any mention of the Haddock patent when doing so.

64. The '977 patent reflects on its face that the Haddock patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

65. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,540,589 to Waters. On information and belief, persons with a duty of candor became aware of the Waters patent no later than September of 2001, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Waters patent.

66. After September 2001, Phoenix submitted a half-dozen Information Disclosure Statements. Not one disclosed the Waters patent. Phoenix also twice amended its claims, but did not make any mention of the Waters patent when doing so.

67. The '977 patent reflects on its face that the Waters patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

68. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 6,336,090 to Chou. On information and belief, persons with a duty of candor became aware of the Chou patent no later than May of 2002, when the Examiner in the '846 patent prosecution mailed an Office Action rejecting the claims of the '846 patent, based in part on obviousness over the Chou patent.

69. After May of 2002, Phoenix submitted no less than five Information Disclosure Statements. Not one disclosed the Chou patent. Phoenix also twice amended its claims, but did not make any mention of the Chou patent when doing so.

70. The '977 patent reflects on its face that the Chou patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '846 patent was the same: J. Nicholas

Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

71. During the time that the '977 patent was pending before the USPTO, Phoenix was aware of U.S. Patent No. 5,983,190 to Trower. On information and belief, persons with a duty of candor became aware of the Trower patent no later than May of 2002, when the Examiner in the '640 patent prosecution mailed an Office Action rejecting the claims of the '640 patent, based in part on obviousness over the Trower patent.

72. After May of 2002, Phoenix submitted no less than five Information Disclosure Statements. Not one disclosed the Trower patent. Phoenix also twice amended its claims, but did not make any mention of the Trower patent when doing so.

73. The '977 patent reflects on its face that the Trower patent was never considered by the Examiner during its prosecution. Notably, the attorney prosecuting both the '977 patent and the '640 patent was the same: J. Nicholas Gross. By intentionally failing to submit this material reference, Phoenix committed inequitable conduct, and the '977 patent is unenforceable.

PRAYER FOR RELIEF

WHEREFORE, DIRECTV prays for judgment as follows:

(a) That the Court enter judgment against Phoenix and in favor of DIRECTV and that the Court dismiss the Amended Complaint with prejudice.

(b) That Phoenix take nothing by reason of its Amended Complaint.

(c) That the Court find that no claim of U.S. Patent Nos. 6,615,172, 7,139,714, 7,050,977, and 7,225,125 has been, or is, infringed willfully, deliberately, or otherwise by DIRECTV .

(d) That the Court find that U.S. Patent Nos. 6,615,172, 7,139,714, 7,050,977, and 7,225,125 are invalid.

(e) That the Court find that U.S. Patent No. 7,050,977 is unenforceable.

(f) That the Court declare this case to be an exceptional case under the provisions of 35 U.S.C. § 285, and that DIRECTV be awarded the cost of suit and reasonable attorneys' fees.

(g) That the Court grant DIRECTV such other and further relief to which they may be entitled.

DATED: March 31, 2008

QUINN EMANUEL URQUHART OLIVER & HEDGES, LLP

By */s/Steven M. Anderson*
Steven M. Anderson
Attorneys for The DIRECTV Group, Inc.

DEMAND FOR JURY TRIAL

DIRECTV hereby demands a trial by jury of all issues so triable in this action.

DATED: March 31, 2008

QUINN EMANUEL URQUHART OLIVER & HEDGES, LLP

By */s/Steven M. Anderson*
Steven M. Anderson
Attorneys for The DIRECTV Group, Inc.